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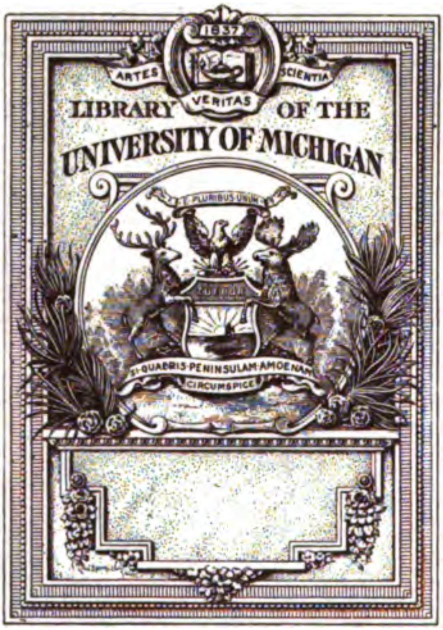
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61

THIRD BIENNIAL REPORT,

OR THE

Twenty-first and Twenty-second Annual Reports

OF THE

STATE BOARD OF HEALTH

OF THE

STATE OF KANSAS,

FROM

January 1, 1905, to December 31, 1906.

APRIL 10TH 1885

STATE PRINTING OFFICE,
TOPEKA, 1907.

LETTER OF TRANSMITTAL.

Office of Secretary of State Board of Health,
Topeka, Kan., January 1, 1907.

To His Excellency, E. W. Hoch, Governor:

Sir—In compliance with the laws of this state, I have the honor to herewith submit to you the third biennial report, or the twenty-first and twenty-second annual reports consolidated, of the Kansas State Board of Health, for the years 1905 and 1906.

Very respectfully,
S. J. CRUMBINE, M. D., *Secretary*.

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STATE BOARD OF HEALTH.

	Term expires	
L. A. Golden, M. D., *President*, Kensington (R.)	March 28,	1907
A. B. Scott, M. D., Jetmore (R.)	“	1908
J. B. Carlile, M. D., Leon (R.)	“	1908
E. P. Mills, M. D., Olathe (H.)	“	1908
C. D. Welch, *Attorney*, Coffeyville	“	1908
H. M. Bentley, M. D., *Vice-president*, Sterling (H.)	“	1909
G. E. Locke, M. D., Holton (E.)	“	1909
C. H. Lerrigo, M. D., Topeka (H.)	“	1909
J. B. Carver, M. D., Fort Scott (R.)	“	1910
B. J. Alexander, M. D., Hiawatha (E.)	“	1910

ADVISORY BOARD.

F. O. Marvin, A. M., Mem. Am. Soc. C. E., Sanitary Adviser, Lawrence.
E. H. S. Bailey, Ph. D., Chemist, St. Univ., Lawrence, Food Analyst.
J. T. Willard, M. S., Agricultural College, Manhattan, Food Analyst.
L. E. Sayre, Ph. M., State University, Lawrence, Drug Analyst.
Sara E. Greenfield, M. D., Topeka, Bacteriologist.
W. J. V. Deacon, Topeka, Statistician.

STANDING COMMITTEES.

On State-house, Public Buildings, and Charitable Institutions.—Doctors Lerrigo, Alexander and Scott and Mr. Welch.

On Water-supplies and Sewage.—Doctors Carver, Locke and Bentley, Mr. Welch, and Professor Marvin.

On Embalmers, Barbers, and Epidemic Diseases.—Doctors Carlile, Mills, Crumbine and Greenfield.

On Adulterated Foods, Drugs, and Drinks.—Mr. Welch, Professor Bailey, Professor Sayre, Professor Willard, Mr. Deacon, and Doctor Crumbine.

On Finance.—The President.

SECRETARY'S REPORT.

TOPEKA, KAN., January 1, 1907.

To His Excellency, E. W. Hoch, Governor:

SIR—In accordance with that provision of the statute which requires the secretary of the State Board of Health to make biennial reports to you upon the vital statistics and sanitary conditions and prospects of the state, this third biennial report, including the twenty-first and twenty-second annual reports, is herewith respectfully submitted.

Up until the past two years the work of this Board has been chiefly concerned in the suppression of contagious and infectious diseases, and a collection of vital statistics. This work has been most admirably done, considering the laws under which the Board has labored, for it must be confessed that the health laws now upon the statute-books confer but little authority upon the health officers other than that of an advisory character, hence it is that many of our suggestions concerning the betterment of sanitary conditions, places and things, are ignored by persons and communities.

Notwithstanding our inadequate laws, and their consequent impediment in aggressive and progressive work, we have endeavored to keep abreast of the times in the inauguration of new and constructive work of vital interest to the health of the citizens of this state.

PURE FOOD AND DRUGS.

One year ago last September the secretary collected the first samples of food and submitted them to the State University chemist for analysis, and thus was inaugurated the Kansas campaign for pure food. On the following January was published in the official organ of the Board, the *Bulletin*, the analyses of a large number of food products. This received the widest publicity, as it was new work and of a somewhat startling nature to local manufacturers, dealers and consumers. The work of analyzing food, including meat and meat products, has been continued up until the present time, and it must be said to the credit of this Board that before the national law had been passed or the Beveridge meat-inspection bill framed, we had compelled the Kansas packers to provide for the Kansas market products that were free from coloring matter and preservatives. This was brought about without the institution of a single suit; but by persistent hammering and the widest publicity an agreement was reached which was entirely satisfactory to this Board. It must be remembered that these analyses were made without one cent of appropriation for carrying on this work, although the work was done of course by the University and Agricultural College free of expense to this Board. Early last spring samples of drugs were collected for analysis, for the purpose of giving publicity to adulterations along this line, and I believe it has had a most salutary effect. Great good has been accomplished in this campaign, although it cannot entirely rid the state of adulterated food, drugs and drinks.

The passage of the national pure-food law, together with the work already done by this Board, emphasizes the necessity of a revision of our own laws, such revision to be along the lines of the new national law, as nearly as our conditions will permit, in order that manufacturers and jobbers may not be hampered by differences or restrictions between the national law and the laws of the various states. Such a bill must necessarily carry with it, if it proves efficient, a sufficient appropriation to provide for not less than four inspectors, in addition to the secretary of this Board, who should be chief food and drug inspector.

A bill has been prepared to carry out the suggestions above made, and has been submitted to the chancellor of the University and the chemical departments of the University and the Agricultural College, and has met with their approval. The bill provides that the laboratories of these two institutions shall be used for the purpose of analyzing food products. Hence, the expense of the creation of a large and expensive laboratory is saved. I trust this matter may receive special mention in your message to the legislature, as I believe it is of the utmost importance to the life and health of the citizens of this commonwealth.

UNITED STATES GEOLOGICAL SURVEY.

As you are aware, this Board has entered into a tentative agreement with the Geological Survey of the federal government, looking to the sanitary and industrial survey of the natural waters of Kansas. The government has appropriated $1500 a year for that purpose. The agreement entered into provides that the state of Kansas shall appropriate a similar sum, namely, $1500 a year for two years. The details and scope of the work have been planned and actually entered upon at this time, twenty-three stations having been established at as many different places throughout the state where samples of water are being gathered daily from the principal rivers and streams and are sent to Lawrence for chemical analysis, which, as you know, is done free of cost to the contracting parties. Examinations are also being made of the immediate supply of water of cities and towns, including water from open wells and shallow water that is liable to be contaminated by drainage from cess-pools and privy vaults.

The constant recurrence and gradual increase of typhoid fever each year for the past few years has been a matter of much concern to this department, and it was by reason of this fact, coupled with a desire to determine the cause of this increase and fatalities, that the federal government was asked to cooperate with us in endeavoring to give us the needed information concerning the water supply of this state. The deaths from typhoid fever, covering a period of the last ten years, have varied from 189 to 397. Assuming that the mortality is ten per cent., there have been, therefore, approximately 4000 cases in this state the past year. This vast amount of sickness and suffering, with approximately 400 deaths annually from a preventable disease, is sufficient to arouse our alarm and apprehension for the future; for with the increased population and the construction of new sewers in towns and villages, which empty their raw sewage into the natural waterways, the condition of such waters is gradually becoming more polluted, hence sickness and death from typoid fever may naturally be expected to increase each succeeding year under our present system. With this knowledge at hand, we are certainly negligent if we do not put forth our best efforts in such provisions for prevention as will reduce and finally eliminate the sources of infection.

But this work comprehends more than a merely sanitary and industrial survey of the waterways. Incident thereto, a sanitary survey of each village and city will be made, which information will be kept on file at this office, and placed under the card-index system, which will furnish data of inestimable value in the interpretation of epidemics and of determining or suggesting preventive measures for their suppression.

That your memory may be refreshed as to the purposes of the bill, they might be briefly summarized as follows: First, to determine the nature and condition of the natural supplies of the state; second, to determine to what extent the natural waters are being contaminated by sewage from cities; third, to determine to what extent the natural waters are being polluted by industrial wastes, such as come from packing-houses, creameries, smelters, refineries, oil-wells, salt works, etc., and in what way these wastes might be utilized for beneficial purposes.

This work has already been taken up in several other states, and thus far has been crowned with great success. In several of the states, where cooperative surveys have been made and where the streams were particularly polluted by industrial wastes, methods of recovery have been used which not only restored the streams to their normal conditions, but put profits in the hands of the manufacturers.

It is understood that should the legislature fail to make the necessary appropriation for carrying out this joint work that the agreement is null and void, and that no obligation rests upon the Board or the state of Kansas, either directly or implied. It is hoped that the legislature may make the necessary appropriation to complete this work so auspiciously begun. The information gained by this sanitary survey will not be of very much value to this Board, nor to the citizens of this state, in a sanitary way, unless the scope of the Board's authority in the control of our natural water supplies is very greatly increased. Companies, corporations or municipalities inaugurating public water-works or sewer systems should be required to submit their plans and specifications to this Board before the work could be begun. These plans and specifications, together with a sanitary survey by our expert sanitary engineer, and proper analysis by our analytical chemist of the water proposed to be used, and such restrictions or suggestions made as circumstances might warrant.

THE "GREAT WHITE PLAGUE."

Pulmonary tuberculosis claimed 960 victims in Kansas in 1905 and 861 in 1906. This is a death-rate in the first instance of 63.7 per 100,000 population of counties reporting, and the latter of 56.7 per 100,000 population of counties reporting. While it is true that many of these deaths were of people who came from other states, seeking the more favorable climatic conditions of altitude, sunshine, and dryness of atmosphere, it cannot be denied that the death-rate of native Kansans has steadily increased the past decade. The statistics from sanatoria for the past five years seem to indicate that from forty to sixty per cent. of tuberculous cases are cured by sanatorium treatment, if received in the incipient stage, and even in a great many of the advanced cases they are restored to health or the disease held in abeyance. These statistics being correct, it would mean the saving of from 350 to 650 lives each year in Kansas by the creation of such an institution for sanatorium treatment. We firmly believe that our state has a duty to perform in the matter of caring for our tuberculous poor. She provides for her insane, epileptics, and moral degenerates, and surely they are of no more value than those who suffer from tuberculosis; besides the chances for cure and restoration to society as useful men and women are infinitely greater. Moreover, the educational value of such institutions in the matter of prevention is beyond computation, and, as it seems that the final solution of this problem must be that of education in methods of prevention, the useful purpose which such an institution would serve is beyond question. Almost every state east of the Missouri river has one or more institutions erected or in course of erection for the care of their tuberculous poor, and the results obtained thus far are more than were hoped for.

The German empire, which is always in the lead in scientific medicine, has over 200 such sanatoria, some for the treatment of the indigent and others for the treatment of those who can pay for the actual cost and care.

Your Excellency's attention, no doubt, has been called by the Board of Control to the urgent necessity of separate buildings whereby tuberculous cases in the state institutions can be isolated from the well. This must appeal to you as being particularly important in institutions for the insane and feeble-minded, where the patients have not the mental ability to understand the necessity of proper care of their expectorations or secretions, and the danger to others of infection by carelessness on their part.

The State Board of Health has inaugurated an aggressive campaign along the line of prevention of this dread disease and are at the present time engaged in gathering a tuberculosis census of this state, that the information derived may be used for the purpose of providing preventive measures, by forwarding to each case reported a pamphlet on modern prevention, in which detailed instructions are given concerning the care of the patient and his expectoration, and up-to-date information as to hygiene and outdoor life. Pamphlets have also been placed in the hands of every family in which a case of tuberculosis has died during the last year, which information was gathered from our files of reported deaths. County health officers have been instructed to thoroughly disinfect and fumigate every house in which a case has occurred. It is thought that in locating the points of infection of the cases now in existence and the places and things previously infected, in which disinfection and a general cleaning up will be inaugurated, a great step will be taken in the prevention of new cases. In addition to this, our pamphlet on prevention has been placed in a great many of the public schools of the state, and is being used as a text-book, whereby these means of prevention are studied, and the information thus disseminated must be of inestimable value in the control of this preventable disease.

REGISTRATION OF BIRTHS AND DEATHS.

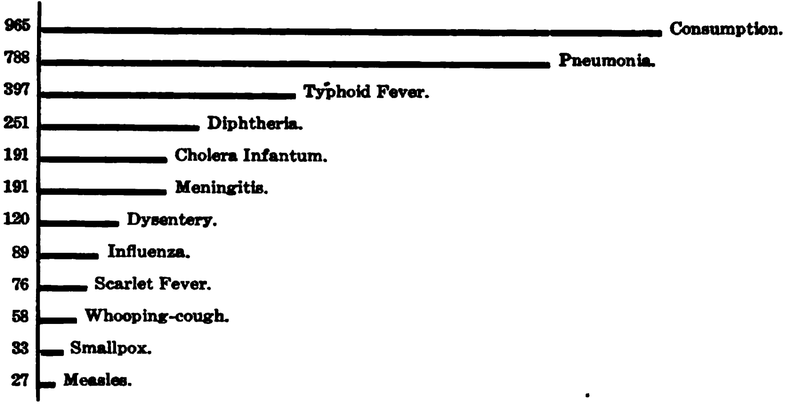
It is impossible under our present law and system to collect complete and accurate statistics of births and deaths in this state, and as accurate statistics must be the underlying basis of a proper interpretation of sanitary conditions, it follows that such an interpretation cannot be accurate and complete nor appropriate preventive measures applied until such time as exact data can be secured. The Bureau of Commerce and Labor, Department of the Census, Division of Vital Statistics, is making an effort throughout the United States to have uniform registration laws passed this winter in such states as are not already classed as registration states, and I believe that there are only sixteen states in which the government is willing to concede that the statistics are properly and accurately gathered and of sufficient value for the United States Census Department. In the accomplishing of this purpose Congress recently passed a joint resolution in which they express approval of the movement of the Bureau, and request favorable consideration and action of the state authorities to the end that the United States may obtain a complete and uniform system of registration.

Aside from the sanitary significance of accurate vital statistics, they are of great importance from a financial standpoint as giving accurate data and certified copies of records of deaths and births in the settlements of estates and the collection of pensions.

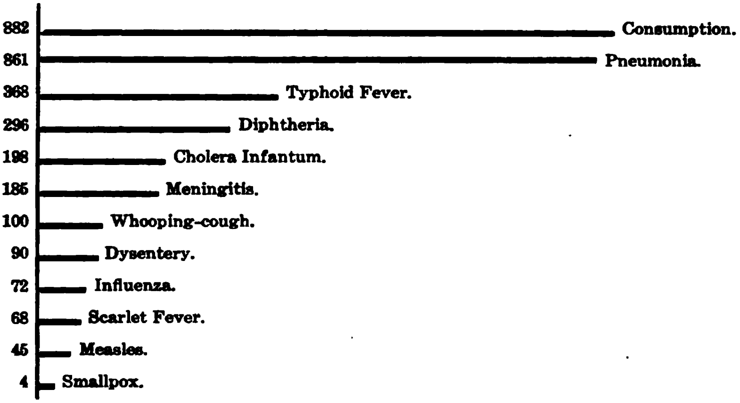
STATE OF THE PUBLIC HEALTH.

The general health of the citizens of Kansas for the years 1905 and 1906 has been fairly good. There have been no unusual epidemics or calamities that have befallen the people of this state. The general death-rate has been approximately the same as in former years. Smallpox has been notably on the decrease as compared with the two years previous, and the average mortality from contagious and infectious diseases has been notably lowered. The following comparative table of infectious and contagious diseases for the past two years will at a glance indicate the mortality as well as show that during the past year there has been a notable diminution in deaths.

1905.



1906.



The following counties have reported no deaths from consumption or typhoid fever during the past two years: Typhoid fever—Brown, Lane, Morton, Wabaunsee, Wallace, and Wichita; consumption—Grant, Haskell, Logan, and Wichita.

Following is the rate of mortality for 1906, per 100,000 population, of counties reporting the following diseases: Consumption, 56.7; cancer, 33.32; typhoid fever, 25+; diphtheria, 22+; cholera infantum, 22+; dysentery, 14.7; measles, 11.11; scarlet fever, 8.8; smallpox, 2.8.

There were 924 deaths reported in 1906 due to external violence, of which number 112 were due to suicide. The different methods chosen for self-destruction were varied, but preference seems to have been given to poison, shooting, and hanging. The various methods chosen were as follows: Suicide, by poison, 51; shooting, 26; hanging or strangulation, 15; drowning, 8; cutting instruments, 6; crushing, 3; asphyxia, 3; methods not classified, 13.

The number of deaths from external violence during 1906 has increased over that of 1905, as indicated by the following table:

	1905.	1906.
Railroad accidents	108	145
Gunshot wounds	78	105
Mining accidents	52	40
Homicide	35	35
Horses and vehicles	20	24

The following table gives the number of deaths at various periods of life during 1905 and 1906:

	1905.	1906.
Under 1 year	1,463	1,636
Between 1 and 2 years	370	533
Between 2 and 5 years	375	541
Between 5 and 10 years	338	425
Between 10 and 15 years	255	342
Between 15 and 20 years	378	423
Between 20 and 30 years	902	1,054
Between 30 and 40 years	796	900
Between 40 and 50 years	762	829
Between 50 and 60 years	965	997
Between 60 and 70 years	1,298	1,422
Between 70 and 80 years	1,155	1,260
Between 80 and 90 years	563	594
Between 90 and 100 years	80	84
Between 100 and 110 years	6	8
Above 110 years	2	1

Of the 11,029 deaths reported of which ages were given, 4366 were above 50 years, or 30.5 per cent. of the people had attained an age beyond the meridian of life. In 1905 six reached an age of over 100 years, and in 1906 eight were between 100 and 110. Two who died in 1905 had reached an age of over 110 years, and one in 1906 had reached an age of over 110.

Of the 12,257 deaths reported for 1906 the following occupations of deceased were given: Attorneys, 19; bakers, 7; blacksmiths, 22; bookbinders, 3; bookkeepers and clerks, 88; bricklayers, 19; butchers, 28; carpenters, 86; cigar-makers, 3; drivers, 32; druggists, 18; editors and writers, 8; electrical workers, 10; engineers, 31; engravers and artists, 10; farmers, 1426; firemen, 21; housewives, 2056; insurance agents, 16; jewelers and watchmakers, 8; laborers, 718; laundry employees, 9; linemen, 7; liquor dealers, 9; machinists, 44; merchants, 150; miners, 114; ministers, 24; molders, 4; nurses, 6; oil- and gas-well workers, 8; painters, 30; paper-hangers, 6; planing-mill workers, 1; physicians, 41; policemen, 4; printers and pressmen, 11; real-estate agents, 25; seamstresses, 38; steam-railway employees, 25; railway employees, operating department, 68; stockmen, 52; street-railway employees, 4; shoemakers, 11; stenographers, 3; stone- and marble-cutters, 12; servants, 164; tailors, 14; tinners, 5; teachers, 34.

The death rate per 1000 population for 1905 was 7.5 per cent., and for 1906 7.5 per cent.

Respectfully submitted.
S. J. CRUMBINE, M. D., *Secretary.*

PROCEEDINGS OF THE BOARD, 1905-'06.

Minutes of the First Quarterly Meeting.

The first quarterly meeting of the State Board of Health was held in the office of the secretary, at the state-house, on March 8, 1905. The meeting was called to order by the president at two P. M. The following members were present: Doctors Mills, Golden, Locke, Alexander, and Carver, and Doctor Greenfield and Professor Bailey, of the advisory board. Absent: Doctors Lowry, Carlile, and Scott, and Mr. Schoch and Professor Bailey.

The minutes of the last meeting were read and approved. The secretary then read a letter from Doctor Lowry, in which he expressed his regrets that he was unable to meet with the Board and conveyed the hopeful information that he was growing in strength and health since locating in San Antonio.

The secretary then read his report, which was received and ordered placed on file.

The recommendations of the secretary were then taken up, and under the head of the recommendation that the rules and regulations for the conduct of the bacteriologist be formulated in compliance with the new law the following resolution was introduced, which, upon motion, was carried:

WHEREAS, The legislature has provided the Board with an official bacteriologist on a salary of $900 a year, beginning July 1, 1905, therefore, be it

Resolved, That the bacteriological work of the Board be enlarged and the duties of the bacteriologist be increased to the extent that the profession in general throughout the state of Kansas be permitted to send specimens of suspected diphtheria for bacteriological examination, and other specimens to determine the time when quarantine shall be lifted.

Resolved also, That the profession in general be permitted to send sputum for diagnosis of suspected tuberculosis and that county health officers be permitted to send pathological specimens of water for the diagnosis of typhoid fever or the location of the source of infection; be it

Further resolved, That the secretary and bacteriologist be requested to draft rules and regulations covering the methods of distribution of tubes and boxes, also methods of shipping water, and report at next meeting of the Board.

Doctor Carver then introduced the following resolution:

WHEREAS, The Congress of the United States, in section 7 of an act approved July 1, 1902, has provided for an annual conference of state health officers with the public health and marine hospital service; and

Whereas, At the last annual conference twenty-two states and territories were represented by their health authorities; therefore, be it

Resolved, That it is the sense of this Board that Kansas should be represented in the person of the secretary of the State Board of Health, at the next annual conference.

Upon motion the resolution was unanimously adopted.

By motion by Doctor Alexander, the following rule was adopted as a part of the rules and regulations of the Board:

Rule 33. No person who is suffering from gonorrhea shall be served in a public bath-room in this state, and no person suffering from syphilis shall be served in any barber shop, such prohibition to continue until six months have elapsed from date of infection.

The recommendation concerning undertakers being prohibited from selling caskets without death certificate was withdrawn.

The president, Doctor Mills, requested Doctor Locke to take the chair, whereupon he submitted the following amendments to the rules of the embalmers' examining committee:

Amendment to section 7 of the embalmers' examining committee rules, by inserting after the word "requirements," in the fourth line, "(*a*) He shall be at least twenty-one years of age and be actually engaged in the embalmer's business as an employee or proprietor"; and to change the letters *a*, *b* and *c* to *b*, *c* and *d*.

Amendment to section 17, by inserting after the word "committee," "He shall be allowed a salary of $100 per year."

Amendment to section 18, by inserting after the word "committee," "He shall be allowed a salary of five dollars per year."

The following resolution was then unanimously adopted:

Whereas, The embalmers' examining committee, at its last meeting, passed a resolution providing for reciprocity of licenses with states having equal standard of requirements as their own; therefore, be it

Resolved, That this Board indorse the action of the embalmers' committee.

The Board then, by motion, which was carried, instructed the secretary to call a meeting of the county health officers in conjunction with the State Board of Health at their annual meeting in June; also instructed the secretary and president to prepare a program for such meeting.

The Board, by unanimous vote, indorsed the action of the secretary in his purpose to organize the sanitary interests of the state by compelling physicians to comply with the law concerning reports of deaths, births and contagious diseases, and put itself on record as being its purpose to enforce such law wherever possible.

After a general discussion of the health interests of the state and the purposes of the Board, a motion to adjourn was carried.

The following bills were audited and allowed:

G. E. Locke	$9 15
H. M. Bentley	23 40
E. P. Mills	11 15
J. B. Carver	23 00
L. A. Golden	31 62
B. J. Alexander	14 00
Total	$112 32
E. H. S. Bailey	2 90
Total	$115 22

SECRETARY'S REPORT FOR MARCH, 1905.

Mr. President and Members of the Board:

GENTLEMEN—On December 17 the following letter was received from Major Zalinski concerning the disinterment of soldiers buried at Fort Hays:

"OMAHA, NEB., December 14, 1904.

"*His Excellency, Governor of Kansas, Topeka, Kan.:*

"SIR—I have the honor to enclose herewith a copy of a communication received from the office of the quartermaster-general of the army, Washington, D. C., relative to the disinterment of the remains of soldiers, and others, buried in the post cemetery at Fort Hays, Kan., and their removal to Fort Leavenworth and reinterment in the national cemetery at that place, and will be obliged if you will refer this communication to the proper officials from whom permission is to be obtained for the removal of the remains in accordance with the instructions of the quartermaster general, or inform me with whom I should communicate to obtain the permission required.

Very respectfully, M. GRAY ZALINSKI,
Major and Quartermaster, U. S. A."

Following is the letter enclosed:

"WAR DEPARTMENT,
OFFICE OF THE QUARTERMASTER-GENERAL,
WASHINGTON, December 12, 1904.

"*Chief Quartermaster, Department of the Missouri, Omaha, Neb.:*

"SIR—Several times since the abandonment of Fort Hays, Kan., the subject of removing the remains from the post cemetery to the national cemetery at Fort Leavenworth, Kan., has been considered by the department; but in each case, owing to protests on the part of citizens of Hays City and the refusal of the State Board of Health to grant permission for the disinterment of the remains, the department has abandoned the proposition.

"Recently a letter has been received in this office calling attention to the fact that the post cemetery of old Fort Hays is in a neglected condition, and it is now the desire of the department to remove these remains to the Fort Leavenworth national cemetery, as there are no means for taking proper care of this cemetery where it is now situated.

"By direction of the quartermaster-general, with this object in view, you will please confer with the public health officials of the state of Kansas and obtain permission from them for the disinterment of these remains and their transfer to the above-mentioned national cemetery at the most convenient time next spring.

"It is understood that the previous objection to the transfer of these remains was due to the fact that some of the remains are those of persons

who died of cholera; but as this occurred in 1867, and nearly forty years have elapsed since their interment, it is not thought that any danger could possibly arise from their disinterment. You might also call attention to the fact that remains of soldiers dying of cholera in the Philippine islands are disinterred after two years, and that it is considered to be perfectly safe to do so. Respectfully, J. B. BELLINGER,
Major and Quartermaster, U. S. A."

I replied to these, saying that permission would be asked from the county health board of Ellis county, and the following letter was sent to Doctor Snyder, county health officer:

"*George B. Snyder, M.D., Hays, Kan.:*

"DEAR DOCTOR—Request has been made by the War Department for permission to disinter remains of soldiers buried at Fort Hays, for the purpose of removal to Fort Leavenworth, Kan., and I request that you send me your permission and approval, as county health officer, for such disinterment. I suppose that under the law I could grant this request myself, but I understand that on a previous occasion objection was made by your citizens to such removal on the ground that some of the soldiers buried there died of cholera, and they were fearful of spreading this disease should such bodies be disinterred. I therefore would desire to have the consent of the people of Ellis county, through you, before I issue this Board's certificate of consent. There can be no doubt that it would be perfectly safe to disinter these bodies now, as I understand that forty years have elapsed since they were buried. Quite recent investigations along these lines have proven conclusively that after a body has been thoroughly decomposed, say at the end of two years, the germs of decomposition have effectually destroyed all pathogenic germs, and in a large number of tests made from bodies dying of various contagious diseases where parts of the remains—bits of clothing, hair and pieces of the coffin—were used for making the tests, in no instance were any pathogenic organisms found, so you can assure your people that if the objections are based on these grounds, they may have no fear in the matter.

"I would suggest that you take the matter up with your city council, and that you cause to be published in your city paper a summary of the suggestions contained in this letter, so that the fears of the people may be allayed. You may also assure them that this Board will insist that such remains be transmitted in air-tight caskets, and all the necessary precautions taken which ordinary prudence would suggest in the matter. There will be no danger. Very truly yours, S. J. CRUMBINE, *Secretary.*"

After following the suggestions contained in the above letter, permission was given by the county health officer for the disinterment of the remains, and the following letter was sent to Major Zalinski:

"TOPEKA, KAN., January 10, 1905.

"*Maj. M. Gray Zalinski, Omaha, Neb.:*

"SIR—I have the honor to enclose herewith a copy of the letter sent by the county health officer of Ellis county, Kansas, for the disinterment of soldiers buried on the Fort Hays reservation in Ellis county, for reinterment at Fort Leavenworth. This permit of removal is conditioned upon the strict observance of the following rule: 'Each disinterred remains shall be enclosed in a hermetically sealed (soldered) tin, zinc, or copper-lined coffin or box immediately after disinterment and before offering such remains to the transportation companies for shipment.' You will also indicate to this office at what time disinterment and shipment will take place, that the local transportation companies may be fully advised of their duties in the matter. Very truly yours,
S. J. CRUMBINE, M. D., *Secretary.*"

Owing to the prevalence of a large number of smallpox cases along the Colby branch of the Union Pacific, and that there had been several cases riding on the trains on this branch, it was thought wise to ask the railroad company to fumigate all passenger-cars in order that the infection might not be spread through that channel, and on December 19 word was received from the general manager that the cars would be fumigated as requested.

The county health officer of Cheyenne county requested an opinion of this Board as to whether or not a county was liable for the expenses of maintenance and professional services in cases that were placed under quarantine by the county health officer. The question was referred to the attorney-general for decision, which is herewith submitted:

"TOPEKA, KAN., January 3, 1905.

"*Dr. S. J. Crumbine, Secretary State Board of Health:*

"DEAR SIR—In reply to yours of recent date asking for an opinion as to whether the county or municipality is liable to reimburse persons who have had scarlet fever or other contagious diseases in their families and have been quarantined, and as a result have had their bedding, clothing and books destroyed by the health officers, I beg to say that there is no statute in this state imposing such liability upon either the county or municipality. There may be instances wherein the public should reimburse persons for such loss; but not being fully advised as to the particular circumstances of the cases you mention, I could not say whether such circumstances exist as to make the public liable, but as a general proposition such loss must fall upon the individual persons and it is their misfortune without any right to compensation. Nor is the county or municipality liable to them for medical attendance or nursing. Of course if the public employed the physician or nurse, such persons would have a right to look to the officers for their compensation. But that would arise by reason of the contract of employment, and for no other reason. If, however, the families are poor or destitute, it would be perfectly proper for the county or city authorities to furnish them aid as in any other case of destitution. Yours truly,

JAY F. CLOSE, *Asst. Attorney-general.*"

On January 5 the following letter was addressed to Dr. C. F. Menninger, president of the city board of health of Topeka:

"TOPEKA, KAN., January 5, 1905.

"*C. F. Menninger, M. D., City:*

"DEAR DOCTOR—The State Board of Health has entered upon a campaign of warfare against typhoid fever, and to that end are making some investigations, and have formulated a bill to present to the legislature giving them the control of the municipal water-supply and sewerage systems of the state. This, in my judgment, is a step in the right direction, but there are other ways and means in which the dread disease of typhoid fever is propagated than by the pollution of the water sources, and that is through contamination of fruit and vegetables by infected insects and dust. This leads me to the point where I desire to make a protest on behalf of the Board against the almost universal practice by the grocerymen and fruit vendors throughout the state and the city of Topeka of displaying their fruits and vegetables and other groceries on benches and in baskets on the sidewalk in front of their places of business, open to the ravages of insects in the summer-time and the deposit of all sorts of filth, including pulverized horse droppings, dried sputum, and any germ-laden dust which the passing breeze may deposit upon them, and this delectable mess is offered to the people for their food-supply. Your honorable Board must agree with me that such a practice is reprehensible and dangerous to both life and health in the extreme, and I believe it is your duty to see that an ordinance is made in the city of Topeka prohibiting such practice, and if such an ordinance has already been enacted, to see that it is strictly enforced. My excuse for taking this up with the authorities of the city of Topeka is for the reason that she should be the example for other municipalities. She is known as being the cleanest city, both morally and sanitarily, of any large city. She is, moreover, the Mecca of all visitors and legislators, and her influence in this direction would be for good throughout the state; therefore I beg of you to see that such a law is enacted and enforced in the interests of public health in general and the city of Topeka in particular. Sincerely yours,

S. J. CRUMBINE, M. D., *Secretary.*"

The prevalence of typhoid fever throughout the state, and in this city in particular, must furnish the reason for the transmittal of such a letter, and I believe this Board should inaugurate a policy of education and advice along these lines, until such time as city boards of health and local health authorities pass such ordinances as will prohibit this source of danger. I would suggest that the committee on special sources of danger to life and health prepare an address, that might be given to the public through the newspapers, registering their condemnation of such practice and asking the coöperation of city councils in its prevention.

A letter of inquiry coming from a legislative committee from Wisconsin concerning the distribution of antitoxin by the state was replied to as follows:

"*Mr. Charles McCarthy, Madison, Wis.:* "TOPEKA, January 6, 1905.

"DEAR SIR—Your letter of December 31 received, wherein you ask our opinion as the advisability of the manufacture and distribution of antitoxin by your state. In reply, would say that I would be greatly in favor of such arrangement under certain restrictions. It might not be worth while to enter into any argument in regard to the matter, as a good deal might be said for and against such a proposition; but on general principles I think that most states are behind the times in caring for their people. Much legislation, time and treasure is spent in protecting live stock from the ravage of disease, for the development of agriculture and horticulture, and all the material interests of the state, and very little done to preserve the public health of the people, hence I say we could with propriety overlook some of the evil effects that might arise from such legislation as you propose in our efforts to save life, for assuredly human life is of vastly more value than the life of a Texas steer or the value of a bushel of wheat or an acre of land. By all means have your committee favor the manufacture and distribution of antitoxin by the state.

"Sincerely yours, S. J. CRUMBINE, M. D., *Secretary.*"

This is a matter that should receive the attention of our own state in the near future. Several of the states and a large number of municipalities throughout the country are supplying antitoxin free. There can be no doubt that life has been saved by so doing.

On January 6 a petition signed by a number of the citizens of Horton was received, protesting against the location of a pest-house in that city, and complaining that a certain physician was not using the proper precautions in coming and going from such pest-house, whereupon the following letter was sent to the chairman of the committee:

"*Mr. W. A. Conn, Horton, Kan.:* "TOPEKA, January 6, 1905.

"DEAR SIR—Your letter just received, and in reply will say that I have referred the matter to the county health officer, Doctor Shannon, of Hiawatha, for investigation and report. There is probably no danger in the pest-house being located where you say, provided the attending physician takes due precaution in change of clothing and fumigation. One hundred and fifty feet of open air space is quite sufficient protection, if ordinary precautions are taken. However, I will await Doctor Shannon's report. In the meantime I think you should be patient, as I suspect you are unduly alarmed. Very truly yours, S. J. CRUMBINE, *Secretary.*"

On the same day a telegram from Ellis, Kan., was received by the attorney-general, complaining that the county health officer of Ellis county was not doing his duty, in that certain cases of smallpox were not quarantined, whereupon the county health officer was notified of the complaint and directed to make investigations and report conditions found. He reported that the complaint was without foundation, and that everything was done that could be reasonably expected in quarantining and isolating those with the disease. There were many cases who had no physicians, and it was found difficult to always locate those cases and place them under quarantine. This same condition has been found to be true in a number of places throughout the state, and in Ellis county in particular, where there have been in the neighborhood of a thousand cases, with no deaths. It can readily be imagined that the public grew apathetic to the dangers of the disease and were unmindful of its contagious nature, therefore an indifference to quarantine regulations and an effort on the part of a good many people to prevent it being known to the health officer that they had smallpox.

On January 10 a request from the county health officer of Gove county to go there to make a diagnosis was refused on the ground that it was not the duty of the secretary of the State Board of Health to make diagnosis in diseases except in cases where a question of quarantine was involved.

A complaint from a physician in Rawlins county that he had not received the appointment of county health officer of his county as against another applicant who was not an old soldier, and alleging that such appointment of his competitor was illegal, and requesting a decision from this office, was referred to the attorney-general for an opinion, which opinion is herewith submitted:

"*Dr. S. J. Crumbine, State-house:* "TOPEKA, January 17, 1905.

"DEAR SIR—I am in receipt of yours of the 14th inst., enclosing the communication from L. G. Graves, of Atwood, asking if the board of county commissioners are required under our statutes to appoint an old soldier county health officer over another applicant for the position who is not an old soldier. Section 6509 of the General Statutes of 1901 provide that honorably discharged sailors and soldiers of the civil war shall be preferred for appointment to positions of public service so long as they are equally qualified with other applicants. But the supreme court has decided that it is for the appointing power to determine the qualification, and if such appointing power determines the question of qualification adverse to the soldier he has no remedy. (Goodrich v. Mitchell, 75 Pac. 1034; Dever v. Humphrey *et al.*, 75 Pac. 1037.)

"Under these decisions, if the board of county commissioners determined that Doctor Graves was more competent than his competitor and appointed him, the competitor has no legal ground for complaint.

Yours truly, C. C. COLEMAN, *Attorney-general.*"

On January 18 and February 13 the monthly bulletins of contagious and infectious diseases were issued, which are herewith made a part of this report:

"KANSAS STATE BOARD OF HEALTH,
CAPITOL BUILDING, TOPEKA, January 18, 1905.

"The following contagious diseases were reported to this office for the month of December, 1904:

DIPHTHERIA.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Atchison	5	1	Dickinson	1	0
Barton	6	1	Douglas	3	1
Bourbon	3	1	Greenwood	4	2
Butler	1	0	Jefferson	3	0
Cherokee	3	1	Labette	12	2
Clay	1	0	Leavenworth	37	1
Cloud	17	3	Lyon	7	1
Crawford	15	6	McPherson	8	1

DIPHTHERIA—*continued.*

County.	*Cases.*	*Deaths.*
Montgomery	3	0
Nemaha	6	0
Pottawatomie	2	0
Rawlins	1	0
Republic	1	0
Sherman	2	0
Washington	3	1
Wabaunsee	3	0
Wilson	3	2
Wyandotte	79	8
Topeka city	32	1
Wichita city	9	2
Totals	271	35

SCARLET FEVER.

County.	*Cases.*	*Deaths.*
Atchison	2	1
Butler	8	0
Cherokee	7	0
Cheyenne	11	4
Clay	15	0
Cloud	1	0
Coffey	1	0
Crawford	10	2
Decatur	3	0
Dickinson	11	1
Douglas	9	0
Geary	2	0
Labette	3	0
Lyon	2	0
Marshall	17	2
Marion	3	1
McPherson	5	0
Mitchell	4	0
Neosho	1	0
Osage	6	0
Phillips	3	0
Pratt	1	0
Rawlins	3	0
Reno	1	0
Republic	34	0
Sherman	2	0
Trego	12	1
Wilson	9	1
Woodson	4	0
Wyandotte	16	1
Topeka city	14	1
Wichita city	2	0
Totals	222	15

SMALLPOX.

County.	*Cases.*	*Deaths.*
Brown	40	0
Cherokee	1	0
Cloud	10	0
Coffey	5	0
Ellis	29	0
Franklin	5	0
Geary	15	0
Gove	1	0
Graham	4	0
Greenwood	3	0
Leavenworth	2	0
Lincoln	50	0
Linn	15	1
Lyon	1	0
McPherson	31	0
Miami	48	0
Mitchell	4	0
Ness	30	0
Neosho	8	0
Osage	25	0
Osborne	1	0
Phillips	1	0
Reno	12	0
Saline	21	0
Trego	7	0
Wilson	7	0
Woodson	6	0
Wyandotte	41	0
Topeka city	3	0
Totals	426	1

TYPHOID FEVER.

County.	*Cases.*	*Deaths.*
Barton	15	0
Cheyenne	1	0
Decatur	1	1
Dickinson	4	2
Douglas	1	0
Gray	2	0
Jefferson	2	0
Kearny	1	0
Kingman	1	0
Labette	6	2
Linn	2	0
Marshall	2	1
Meade	1	0
Ness	1	0
Pottawatomie	1	0
Pratt	1	0
Rawlins	1	0
Reno	1	0
Sheridan	1	0
Stafford	12	0
Thomas	8	2
Trego	20	2
Wilson	9	0
Wyandotte	16	16
Topeka city	3	3
Wichita city	6	2
Industrial Reformatory—Hutchinson	1	0
Totals	120	31

"Dear Doctor—I herewith enclose the bulletin of contagious diseases in Kansas for the month of December, as reported from sixty-five counties. As will be noticed, these diseases are rather widespread, and in some counties have assumed the form of an epidemic. Owing to the almost uniform mildness of smallpox the matter of quarantine in some counties has been an exceedingly difficult one as many people did not seek the services of a physician, hence they were not known to the county health officer until a great number of exposures were made. It is the duty of all county health officers to promptly quarantine all cases, regardless of the mildness or severity, and where exposures have been made a list of the persons exposed with the date of exposure should be tabulated, whereby such persons can be held under surveillance until the period of incubation has passed, and in that way stop the spread of the epidemic in that particular locality. Four cases have come under my observation recently where people have traveled from one place to another while suffering from smallpox, exposing thereby everybody in the railway-coach in which they traveled, infecting the coach itself, and making it difficult to determine the extent of infection produced by such infected coach. These cases have emphasized the necessity and importance of a law compelling railway companies to fumigate their cars at regular stated intervals, and such a bill has been prepared and introduced into the legislature.

"Three other bills have been introduced which have received the sanction of this Board, namely, a bill placing the municipal water-supply and sewerage systems of the state under the Board's jurisdiction, a bill amending our present health-board law, in which the powers of the Board are enlarged, and one compelling compulsory vaccination in cases of epidemics, when ordered by the State Board of Health or by resolution of the local board of education. These bills should meet the hearty indorsement of every physician in the state of Kansas, and I would thank you very much if you would see in person or communicate with your representative and state senator, asking for their indorsement of these bills. Will you please do this at once? *Do it now!* Fraternally yours,

S. J. CRUMBINE, M. D., *Secretary.*"

"KANSAS STATE BOARD OF HEALTH.
CAPITOL BUILDING, TOPEKA, February 13, 1905.

"The following contagious and infectious diseases have been reported to this office for the month of January:

DIPHTHERIA.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Bourbon	2	2	Montgomery	2	0
Brown	2	1	Nemaha	7	1
Cherokee	3	2	Wabaunsee	1	0
Clay	2	0	Leavenworth city	18	2
Finney	1	0	Topeka city	10	2
Graham	5	0			
Labette	5	0	Totals	55	10

SCARLET FEVER.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Brown	3	0	Mitchell	6	0
Cherokee	2	0	Pawnee	1	0
Clay	10	0	Pratt	1	0
Cloud	2	0	Rawlins	2	1
Crawford	5	1	Reno	5	0
Douglas	1	0	Saline	1	0
Elk	6	0	Sedgwick	2	0
Ford	15	0	Shawnee	1	1
Harvey	2	1	Washington	5	1
Lyon	3	0	Woodson	8	1
Labette	6	0	Leavenworth city	2	0
Marion	5	1	Topeka city	12	1
Marshall	20	1			
McPherson	17	0	Totals	149	9
Meade	6	0			

SMALLPOX.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Allen	3	0	McPherson	63	0
Anderson	1	0	Miami	?	0
Atchison	3	0	Mitchell	33	0
Bourbon	25	0	Montgomery	1	0
Brown	75	1	Osborne	15	0
Cloud	2	0	Pawnee	8	0
Crawford	19	0	Pottawatomie	?	0
Ellis	120	1	Rawlins	41	0
Franklin	23	0	Reno	22	0
Gove	33	0	Rooks	?	0
Graham	5	0	Russell	?	0
Harvey	1	0	Saline	32	0
Jackson	8	0	Sheridan	7	0
Lyon	23	0	Thomas	5	0
Labette	4	0	Wabaunsee	1	0
Lane	12	0	Woodson	1	0
Lincoln	25	0	Topeka city	3	0
Marion	101	0			
Marshall	3	0	Totals	713	2

TYPHOID FEVER.

County.	*Cases.*	*Deaths.*
Atchison	1	0
Cherokee	1	1
Crawford	2	0
Hodgeman	2	0
Labette	2	1
Leavenworth	1	0
Nemaha	2	1
Thomas	2	0
Topeka city	1	0
Totals	14	3

S. J. CRUMBINE, M. D., *Secretary.*"

The rules and regulations of the Barbers' Board were revised and approved by the secretary since our last quarterly meeting, but which, as you know, have become inoperative by a repeal of the barber law. Two new rules were suggested which might with propriety be included in the Board's rules and regulations, namely: That no person afflicted with syphilis shall be served in a public barber shop for at least six months after infection, and no person suffering with gonorrhea shall be served in a public bath-house.

In 1902 Congress passed a law giving authority to the surgeon-general of the marine hospital service to call an annual convocation of the executive officers of the state boards of health to meet in connection with the national board of quarantine and the marine hospital service, at such time and place as designated by the surgeon-general. Thus far Kansas has not been represented in this conference. While these meetings are somewhat of the nature of a continuation of annual conferences held previous to this time, they now have the force and sanction of governmental law, and in a measure are compulsory. I would therefore suggest that this Board take such steps as suggest themselves and that you be represented at the next annual conference.

Since posting the rules and regulations for transportation of the dead of the State Board of Health in every railroad station in Kansas, an immense amount of work has been done by the undertakers' committee and the secretary of this Board in bringing to light infractions of the law, both as to undertakers, and by railroad companies in accepting bodies for shipment that were not prepared according to the rules and regulations. No prosecutions have been made, as it was thought best that a campaign of education should first be inaugurated, for it was found that most of the violations, if not all of them, were due to a lack of knowledge of the law or a misinterpretation of its provisions. The undertakers' committee was never in such a flourishing condition. The rules are thoroughly lived up to, and the railroad companies are in hearty cooperation with the provisions as laid down by the Board. The time must come soon, however, when further violations cannot go unpunished, and it is for this Board to indicate what time such measures shall be put into execution. I would suggest, also, that the embalmers' examining committee be requested to formulate a rule prohibiting undertakers from selling a casket or interring a body without first having filed with them a death certificate by the attending physician, or if there is no attending physician, from coroner or county health officer, and such returns to be made immediately to the county health officer and reported to this Board. I believe if this plan were put into operation that more accurate death returns could be obtained in this way than by any other method that it is in the power of the Board to inaugurate. Since the undertakers' committee has been created the secretary has received no stated or fixed salary, he submitting bills from time to time fixing the salary at such figure as he thought he was entitled to. I would recommend that the Board at this session fix a stated salary for the secretary and treasurer of the committee.

It has also been suggested that the officers be appointed by this Board rather than elected by the committee. In all likelihood there are arguments for and against such a procedure and I will leave it to the members of the Board to indicate their desires in the matter.

RECOMMENDATIONS.

I recommend that the Board make arrangements for the second annual meeting of county health officers with the State Board of Health at the time of the Board's meeting in June. Such meetings I think might be productive of great good in that a more hearty cooperation be had from the county health officer in reporting to this Board.

I recommend that the various committees as appointed by the president make an annual report at the June meeting, making such recommendations as they deem wise to further the interests and usefulness of this Board.

I recommend that the Board put itself on record, by resolution or otherwise, that it is their determined purpose that the law be complied with concerning the reporting of births, deaths, and contagious diseases, by physicians in this state. Would suggest also that this matter might be brought to the attention of the profession through the various state societies by members of this Board, which would be productive of great good also.

I recommend that the Board instruct county health officers and health officers of municipalities to keep a book of record of their official acts, including histories of epidemics, reports made to them by physicians, and abstracts of reports sent to this office, and that a thorough state sanitary organization be effected at the earliest possible date.

Respectfully submitted, S. J. CRUMBINE, *Secretary.*

Minutes of Annual Meeting, 1905.

The second annual conference of the State Board of Health with county and municipal health officers convened in room 8, fourth floor of the capitol building, in Topeka, at ten o'clock, June 27, 1905.

In the absence of the president, the secretary called the meeting to order and introduced Doctor Nicoll, of Topeka, who responded in an address of welcome.

The sentiment of Doctor Nicoll's address was highly appreciated, as was evidenced by the hearty applause which followed.

The secretary then gave a brief résumé of the new laws that had been passed by the last legislature, reading in full the pure-food law, and urging upon the health officers to interest themselves in its provisions by sending samples of suspected foods or drinks to the chemical department of either the State University or Agricultural College for analysis, as the law provides.

Dr. Sara Greenfield then read an address on the new state laboratory, in which was outlined a history of the bacteriological work of the Board from its creation as a Board up to the present time, and outlining the policy of the State Board of Health in its application of the new law creating an official bacteriologist.

A general discussion on the subject of disinfection was participated in by a number of the physicians, and it was pretty generally agreed that the only reliable disinfectant is formaldehyde gas, and its best mode of generation is by the use of either the sheet method or formalin and permanganate of potash.

An adjournment was then taken for the noon recess.

At one P. M. the State Board of Health met for their annual business meeting in the office of the secretary. All the members were present except Doctors Lowry and Bentley, and Professor Marvin, of the advisory board.

Owing to the lack of time, the reading of the minutes of the previous meeting were dispensed with, and the secretary gave a brief epitome of his quarterly report.

The committee, composed of the bacteriologist and secretary, who had been appointed at the last quarterly meeting to provide rules for the conduct of the new state laboratory, presented the following rules, which were adopted:

1. Free examinations of sputum of tuberculosis and specimens from suspected cases of diphtheria shall be made for all physicians of the state; physicians of cities of the first class must send specimens through their county health officer. If county health officer is located at an inconvenient distance from such city, the municipal health officer may be designated instead.
2. All specimens must be sent in boxes and mailing cases provided by the State Board of Health.
3. Examinations of water shall be made only upon request of county health officer.
4. Repositories for supplies shall be established in each county in the state.
5. Examinations of specimens for the purpose of life insurance will not be received.

Upon motion, the secretary was instructed to enforce, if possible, the collection of assessors' returns and of vital statistics.

The matter of standardization of disinfectants was then brought up for discussion, and a committee, composed of Doctor Alexander, Doctor Crumbine, and the bacteriologist, Doctor Greenfield, was appointed to investigate the subject and report at the next meeting of the Board.

The report of the embalmers' examining committee was then read, approved, and ordered placed on file. Three members of the examining committee whose terms had expired were continued until the September meeting, at which time their successors will be appointed.

The president then called for nominations for the office of president for the ensuing year, whereupon Doctor Alexander placed in nomination Dr. J. B. Carver, of Fort Scott, and upon motion the rules were suspended, and Doctor Carver elected by acclamation.

A call for nominations for vice-president was then made, whereupon Doctor Carlile placed in nomination Doctor Alexander, of Hiawatha. There being no other nominations, the secretary was instructed to cast the vote of the Board for Doctor Alexander.

The time having arrived for the second session of the conference, a motion for adjournment was carried.

At 2:15 P. M., the second session of the conference convened in room 8, and was addressed by Dr. C. B. Van Horn, of Topeka, on the subject of "Municipal Disposal of Garbage and Waste." The subject was disposed of in a masterful way by Doctor Van Horn. Doctor Breeding, of Marysville, opened the discussion on this subject, paying particular attention, however, to rural sanitation, and the conditions that confronted the villages and towns that are without the modern conveniences of sewer-systems and crematories. The question was then discussed by a number of physicians present and much information of a valuable character elicited.

Mr. C. D. Welch, of Coffeyville, attorney for the Board, then read a paper on the "Legal Status of the County Health Officer."

Dr. Graybill then read an interesting paper on the "Relation of the County Health Officer to the Profession," which was very well received by the physicians present. Dr. Graybill spoke as follows:

THE HEALTH OFFICER'S RELATION TO THE PROFESSION.

One who is in a position to know is often impressed with the strained relations which sometimes exist between the medical man who has control of the health department of a county and some members of the profession. That such relations have in times past existed, and do still, becomes a self-evident fact to every health officer soon after he assumes the responsibilities of his office.

I do not assume that I am a pessimist, neither do I care to have others present me with that appellation, but I am of the opinion that the county health officer is a much-abused piece of humanity; and that much of this can be charged to members of the medical profession cannot be denied. I am not prepared to say that this is ever done intentionally.

But how often it occurs, when we call at a residence to disinfect after a case of contagious disease, the good housewife informs us that the attending physician said "the spare bed-room need not be fumigated as no one was in that room since Mary was sick." Or, again, when the young health officer appears at a wealthy home in the city where several inmates have been sick with smallpox, he is met with the gentle reminder that "Doctor Know-it-all, the family doctor, has seen to all that," and that his (the health officer's) services were not needed, and nothing short of the chief of police will secure his admission—all because the attending physician has not informed the family that his presence there was according to law.

Another factor, and one which is contributing much as a disturbing element, is the lack of confidence which many members of the profession place in the health officer; whether it is because of exaggerated ideas of their own abilities or lack of confidence in those of the health officer, or whether they fear it too much of a condescension on their part and would thereby add to the popularity of this much-abused man, is a problem I am unable to solve. True it is, however, that many are the medical men who will treat cases of contagious diseases and will never mention that sooner or later the head of the health department will appear upon the scene, and that his instructions must be regarded as final. Would it not be infinitely better for all concerned if the doctor informed the family when a diagnosis of contagious disease is made that the health officer, acting in his official capacity, would instruct them along sanitary lines, and that his advice could be accepted as being good and sound, and that they should work in harmony to prevent a spread of the disease?

There is another point I wish to emphasize before leaving the subject of the profession, and that is in regard to the vital statistics of the counties. Down in Harvey, the county from where I hail, we have in the neighborhood of twenty-five active, up-to-date physicians; and to prove to you that I am telling the truth and that they are all I claim for them, these same physicians, with two or three exceptions, have not had a death in their practice this year, and it does not look as though there was going to be any. Another natural sequence in a county with such smart fellows as we are, is, there would be no birth reports to send in, and it does not look as though there would be any of those very soon.

The greatest problem confronting the various state boards of health today is the collecting of vital statistics. Scarcely an assembly of the different state legislatures but what have endeavored to perfect some system whereby these reports could be correctly obtained. Thus far only nine states have given anything like a correct report. (Kansas is not on this list.) Why physicians, who are usually the foremost advocates of the enforcement of laws, should neglect this one that is so important to the advancement of medical science is beyond my comprehension. It is to be hoped that some method will soon be placed in vogue that will insure prompt and proper returns of these reports.

I have endeavored in the foregoing to point out a few facts which tend to destroy the close relation which should exist between the profession and the health officer. I will also show a few weak points on the other side.

It does not require a very great stretch of the memory to recall a time when the office of the county health officer was a thing which appeared on paper rather than a reality in protecting the community from filth and ravages of contagious diseases.

The majority of you can recall times in your county when the man who presided over the health department was not capable of intelligently caring for a case of measles. I could recall many instances where the physician, appointed by a lay board of county commissioners to fill this most important of all county offices, was not even a graduate of any medical college, and had not the slightest conception of hygiene or sanitary science.

I recall one instance where a neighborhood became infected with diphtheria and half the children of the community contracted the disease; many died, and the health officer never came to the infected district, and, so far as I know, never conferred with any of the stricken families or the physicians having charge of these cases. The only protection that was afforded the uninfected family was fear. And were it not for the fact that an able physician had been called into the neighborhood, who made it his individual duty to assume control of the epidemic, a most deplorable condition would have soon existed.

In some counties it has been the custom to give this office to the older members of the profession, who were no longer able to meet the demands of the modern physician, either from an intellectual or physical standpoint. It was argued "that there was nothing much to do but draw the salary, and most any one could do that."

Another lamentable fact is, that in not a few cases political debts have been paid by this office. I could cite several cases in counties in Kansas where this has actually occurred.

Still another condition, which is quite common all over the state, and one which is viewed with much disdain by the honorable members of the profession, is the littleness to which these unscrupulous doctors will stoop in cutting the salary of this office. They conclude that the commissioners, seeing an opportunity to save a few dollars for the county, will the more readily consider their applications, and it is striking how often their hypothesis proves correct. This cut-rate, department-store plan has advanced to such a degree of avariciousness, in a few places at least, that the most learned members of the profession will not consider the proposition of accepting the responsibilities of so important an office. And the consequences are that some of these positions have been filled by professional imbeciles. Very little, if any, of this state of affairs now remains. The health officer is becoming better educated; laws are being enacted at every session of the legislature to give him wider scope and more authority.

The various county health boards are getting more enlightened and choose better men for their sanitary advisers. Physicians begin to recognize the value of health officers who are adepts on hygiene and sanitation, and especially is this true in the larger cities. With this revolution that is constantly going on, it is necessary for the relations between the profession and these men, whose duty it is to see that all the laws pertaining to the public health are enforced, to become closer and more professional than in times past.

The man chosen to fill this important position should be deliberate and always exercise his best judgment. If he is called by a brother physician to confirm a diagnosis of diphtheria, and, after a thorough examination, he believes it to be a case of tonsilitis, he should not hesitate to tell the physician and the family his honest belief, no matter how much he wishes to protect his brother practitioner, for by this false protection the family, the county and the state are often the losers.

In some counties it is the rule to have the health officer verify the diagnosis where the attending physician is in doubt. In such communities the relation of the health officer to the physician is indeed an important one, and he should keep in very close touch with the best men and consult them freely. In case he himself is in doubt, he should not be slow in saying so, and insist upon having a physician who can aid in clearing up the diagnosis. If in the course of his duties he should find a case of contagious disease cared for by an ignorant doctor, or one who is careless or negligent, the health officer should not hesitate to advise him and call his attention to the State Board's rules, and insist on a strict adherence to same. This can be done in such a manner as to cause no embarrassment to him or ridicule from the public.

It is almost needless to say that the laws pertaining to public health and the rules of the State Board should be at every health officer's tongue's end. It frequently occurs that a member of the profession wishes to be enlightened on this subject, and it saves some embarrassment and much valuable time if the health officer can give him the desired advice without having to make a trip to his office to find out.

The most important factor to be considered in strengthening the relation between the health officer and the profession is medical organization. Every health officer in the state of Kansas should, if he has not already done so, become a member of his county and state medical society, and take an active part in each meeting. He should make it his duty to encourage this organization whenever the opportunity presents itself. If he is called upon by his society to appear on the program, his papers and talks should be along such lines as will improve sanitary conditions, advocate a stricter adherence to the quarantine laws and point out the importance of reporting the vital statistics.

When county organizations meet in their regular sessions it is on common ground, and if the health officer is a member of this body, it will strengthen that relation of professional brotherhood which is so essential to a strict enforcement of the laws, rules and regulations of the State Board of Health.

I predict that the time is coming when the county medical society will present the name of the physician to be appointed as health officer to the county commissioners, and will fix his salary. When this happy condition of affairs takes place, which we hope will be soon, raging epidemics of contagious diseases will be reduced to a minimum. Many lives will be saved which have heretofore been sacrificed through ignorance and neglect, and then the duties of the county health officer will be a pleasure.

Doctor Iles opened a discussion of this topic, and was followed by a number of the county health officers present.

The question of "Quarantine *versus* Vaccination in the Control of Smallpox" was ably discussed by a number of the physicians. This was followed by a few general remarks in which the health officers expressed their appreciation of the meeting, indicating that it was both profitable and pleasant to meet in these annual sessions, and expressing a determination to be present next year.

Upon motion, the second annual conference adjourned.

The following bills were audited:

	Am't allowed.	*Am't due.*
A. B. Scott	$21 95	$8 55
L. A. Golden	23 23	8 55
C. D. Welch	19 45	8 55
J. B. Carlile	15 64	5 69
J. B. Carver	14 96	5 69
B. J. Alexander	9 16	2 84
E. P. Mills	6 86	2 84
G. E. Locke	4 81	2 84
Totals	$116 06	$44 75
E. H. S. Bailey	$2 66	

SECRETARY'S REPORT.

Mr. President and Gentlemen of the Board:

On the afternoon of the last quarterly meeting I received the following telegram from Kinsley: "Come on first train to decide whether we have smallpox or not. Dr. C. N. Mosher." I also received a letter from Doctor Pearson, of the same city, requesting my presence to determine diagnosis of an eruptive disease which had been prevalent for some time in Kinsley and vicinity, whereupon I went to Kinsley, and was taken by Doctor Mosher to see several cases that he thought were chicken-pox, but which other physicians contended were smallpox. There was no difficulty in making a positive diagnosis of smallpox. The doctor was instructed to see that the houses were strictly quarantined and a close watch kept of all suspects. While this diagnosis was contrary to Doctor Mosher's opinion, it must be said to his credit that he very gracefully acquiesced in the diagnosis of the secretary, and promptly took such measures as the law provides in such cases. All houses where the disease had occurred were ordered fumigated, regardless of former diagnosis or the severity of the disease, and subsequent reports indicate that there has been no further trouble in this community.

In response to an urgent letter from White Cloud, complaining of a nuisance that had existed for over a year, I asked Doctor Alexander to visit that city for the purpose of making a thorough investigation. On March 16 Doctor Alexander very kindly made the visit, reporting conditions found and his actions taken in the matter.

Doctor Alexander dealt with the matter in a very clear and judicial manner, and pointed out the defects in the law, or rather the lack of law concerning the authority, scope and power of the State Board of Health and county health officers in matters of this kind. Certainly another legislature should not go by without making some provision whereby these nuisances can be abated through the responsible authority of some official.

On March 14 a telephone message from Mr. N. H. Loomis, general attorney for the Union Pacific, indicated that a box-car belonging to their road had been sidetracked at Simpson, and was being used for a pest-house for smallpox. Mr. Loomis requested that the patient be removed, the car fumigated and released from quarantine. Whereupon a letter was sent to the county health officer of Mitchell county, inquiring for the facts in the case. Upon receiving the information asked for, the following letter was sent to Mr. Loomis:

"TOPEKA, KAN., March 17, 1905.

"*N. H. Loomis, General Attorney, Union Pacific Railway Company, City:*

"DEAR SIR—A letter received from the county health officer of Mitchell county explains that the young man who is now confined in a box car, at Simpson, and who is suffering from smallpox, was brought there by a man living in Lincoln county, and for whom he was working, and when he discovered that the young man had smallpox he took him to Simpson for the purpose of taking the train to go to another part of the state where he had friends. The agent at Simpson very properly refused to sell him a ticket, and notified a resident physician, who kept the man in the depot until the county health officer could be informed. There being no pest-house in Simpson or in Mitchell county, and this man having no home in the county, and being found on railroad property, the best thing that could be done in this particular instance, and a very wise one in my judgment, was to remove him from the depot so as not to embarrass the business of the company and place him in a box car, where he was provided with the necessities and comforts. The depot and depot agent were fumigated, and the business of the company permitted to continue. I have written a letter congratulating the county health officer on the action taken, and I think you will agree with me that such action was not only wise but humane.

"The county health officer has been instructed to release the patient at the earliest possible date compatible with his safety and that of the public, when the box car will be fumigated at the expense of the county and released. In passing let me say that I believe it is due to the agent at Simpson that he receive your hearty commendation in his refusal to sell a ticket in this case, as it has been our experience with many an agent that in order to have gotten rid of the fellow he would have sold him a ticket and allowed him to get out of the county.

"I will advise you when the car has been fumigated and released.

"Word has just been received from the county health officer of Sheridan county that four cases of smallpox are quarantined in the depot at Studley, on your road. I will inquire into the particulars and advise you of same upon receipt of word. Very truly yours,

S. J. CRUMBINE, *Secretary.*"

A later report from Doctor Lobdell indicated that the patient had been discharged as well after being subjected to the proper disinfection, the box car was fumigated and turned over to the company.

On March 18 the following letter was received from Mr. E. O. Post, city assessor of Atchison:

"ATCHISON, March 17, 1905.

"*Mr. S. J. Crumbine, Topeka, Kan.:*

"DEAR SIR—I have to inform you that on account of the limited number of deputies allowed me, and the brief time prescribed for taking the regular assessment and the usual census of the city, to wit, May 10, 1905, at which time such returns must be delivered into the hands of the county clerk, I find it will be impossible for me to comply with your want to furnish you with a record of marriages, births and deaths in the way and manner prescribed and indicated by the blank form furnished from your office and supplied me by the county clerk of Atchison county.

"I have no right to employ extra help or assistance to enable me to comply with your want. To give you the information prescribed by the blank would consume as much time practically as to take the assessment and census that we are now engaged in.

"Our county commissioners do not exhibit any inclination to pay for any extra work necessary to get this detail, and for the reason expressed I do not feel disposed to comply with your want. However, if you can authoritatively assure me that the necessary expense will be paid, the record you want may be attended to. Yours very truly, E. O. POST."

An opinion was asked of the attorney-general as to whether or not assessors are compelled to furnish the information required by law to this office. Mr. Coleman replied as follows:

"TOPEKA, March 20, 1905.

"*Dr. S. J. Crumbine, Secretary, Topeka, Kan.:*

"DEAR SIR—I have yours of the 18th, in which you inclose a letter from the city assessor of Atchison, in which he informs you that he will not perform the duties imposed upon him by section 6665 of the General Statutes of 1901. In reply, I beg leave to say that the duties prescribed by said section are mandatory, and the assessor has no more right to say that he will not perform those duties than that he will not perform any other duties imposed by the statute upon his office. He might, with just as much reason, refuse to list certain kinds of property, because it would take too much time, as to refuse to perform the duties prescribed by said section. He says that the county commissioners are not disposed to pay for any extra work. It makes no difference whether the county commissioners are inclined to pay or not. They have no discretion in the matter. The county is absolutely liable for the services of the assessor and will have to pay him for his services whether the county commissioners are so inclined or not. The statutes prescribe the duties to be performed by assessors. It is their duty to perform those duties faithfully and properly, and no discretion is reposed in the assessor to determine what particular duties he will perform and what he will not. The letter of Mr. Post is herewith returned. Yours truly,

C. C. COLEMAN, *Attorney-general.*"

On March 30 I received the following letter from Doctor Marner, county health officer of Marion county:

"March 29, 1905.

"*S. J. Crumbine, M. D., Topeka, Kan.:*

"DEAR DOCTOR—I swore out a warrant for the fellow who disregarded quarantine and refused to allow fumigation. He employed attorneys but got scared out, plead guilty to one count, was fined twenty-five dollars and costs, which were twenty-five dollars more. His attorneys charged him twenty-five dollars, so it cost him seventy-five dollars for monkeying with the buzz-saw.

"The disease is about run out in the community in which I had so much trouble and expense. The county commissioners stood by me fine, and so did the county attorney. G. P. MARNER."

To this I replied with a letter of commendation for his zeal and energy in carrying out the provisions of the law.

The following letter, which was received from the *Municipal Journal*, should receive the Board's attention:

"April 22, 1905.

"*Secretary State Board of Health, Topeka, Kan.:*

"DEAR SIR—As a matter of general interest to the readers of *The Municipal Journal*, I should like to have you inform me whether or not your state has established a standard for disinfectants. The British government has recently standardized the use of disinfectants, which is considered a great benefit to the public. If your state has not adopted a similar standard, does it propose to do so in the near future? In your opinion, should such a standard be adopted? Complete information along this line will be appreciated. Will you kindly send to my address a copy of your last annual report. Yours truly,

WM. CRANDALL, *Managing Editor.*"

The matter of standardizing disinfectants is one in which your secretary would like to have instructions. There are frequent inquiries and many times acrimonious disputes as to whether or not certain disinfectants are efficient and sufficient in certain given cases. The absence of a standard of requirement by this Board leaves the matter an open question, and your secretary can do nothing but advise as to what the best authority is on the subject at present. I would suggest that the Board establish a standard; if not at this meeting, to appoint a committee for a thorough investigation of the subject, to report at a future date, when such standardization may be adopted as the committee may suggest.

On May 1, a letter from the city health officer of Wilson, Ellsworth county, contained an inquiry as to whether or not the board of education could exclude from public schools such children as were not, or refused to be, successfully vaccinated—a severe epidemic of smallpox being then in existence in the city of Wilson and surrounding community. Upon inquiry of the attorney-general, the following reply was received:

"*Mr. S. J. Crumbine, Secretary, State-house:* "TOPEKA, May 4, 1905.

"DEAR SIR—I am in receipt of yours of the 2d inst., in which you enclose communication from the health officer of Wilson, Kan., relative to the power of the board of education to exclude from the schools children who have not been vaccinated. This question was once passed upon by our supreme court in the case of Osborne v. Russell, 64 Kan. 537, and it was there determined that the authority to exclude children from the schools for want of vaccination did not exist; but in that case there was no claim that an epidemic of smallpox existed in the community; and because there was not an epidemic was one of the reasons assigned by the court for its decision. But in the case at Wilson the epidemic does exist. Moreover, the health laws have been considerably extended in this state since the case above cited was begun. In view of these facts I am of the opinion that in a community where smallpox is epidemic, and the board of health recommends it, the school board can lawfully exclude children from the schools for want of vaccination; but in the present state of our law, there is considerable uncertainty as to the authority in question, and no one can state positively to what extent the board of education could exercise its authority to exclude children from the schools for want of vaccination.

Yours truly, C. C. COLEMAN, *Attorney-general.*"

On May 4 the following letter was received from the county health officer of Sumner county:

"*S. J. Crumbine, Topeka, Kan.:* "WELLINGTON, May 3, 1905.

"DEAR DOCTOR—I write you in regard to the sanitary condition of Caldwell, Kan. The city has quite a number of dry wells or cesspools which are being used at this time, and until recently have been using old wells for cesspools, which I ordered stopped. The owners of these dry wells or cesspools insist that there is no danger of contamination. In my opinion there is danger for the reason that these cesspools are dug down to the sand which takes up and carries off all the contents of the cesspools. There are at this time about 100 wells being used by families in the city for drinking water and general usage. I am rather at a loss to know what to do under the existing conditions, and would like advice from the State Board. I want to know that I am right before proceeding farther. They have at this time one case of typhoid fever in the city. Some of the citizens are getting very much alarmed. I enclose a letter from a member of the city health board, which you can read and investigate, and from which you can perhaps get an idea of the condition of affairs. I will be governed altogether by the direction of the State Board. Awaiting your instructions in this matter, I am, fraternally yours, L. F. HARMON."

The following reply was sent:

"*L. F. Harmon, Wellington, Kan.:* "TOPEKA, May 4, 1905.

"DEAR DOCTOR—I have your letter of the 3d, enclosing a letter from Doctor Hobson. Doctor Hobson wrote me a similar letter, to which I replied as follows:

"'DEAR DOCTOR—In reply to yours of the 26th would say that I have, under separate cover, mailed you a copy of our rules and regulations, and on page 11 you will find the rules concerning the matter of which you write. If any of these cesspools are within fifty feet of a used well they must be condemned. Moreover, you will note in rule 3 that these cesspools and reservoirs must be cleaned at least once a year. I undertake to say that the owners of such places as you indicate will not desire to comply with these requirements, and they therefore should be condemned. There can be no question but what this practice is dangerous and reprehensible in the extreme, as we have good authority, who have given these matters scientific investigation, who tell us that pathogenic bacteria may be conveyed for a considerable distance in loose soil and water-bearing strata. It was supposed, when formulating these rules, that fifty feet would be sufficient distance to obviate any danger from such source, but my individual opinion is that where the soil is loose and porous that distance would be insufficient to guarantee a perfect filtration for bacteria.'

"This letter to Doctor Hobson covers the ground, I think, and should be the basis of your action in conjunction with Doctor Hobson. I would certainly take the stand that these cesspools are a source of danger to the citizens of Caldwell, and particularly now that there is a case of typhoid fever in the city, and order the abandonment of all such cesspools, unless the owners will comply with the rules as found on page 11 of our pamphlet. I herewith return Doctor Hobson's letter.

Very truly yours, S. J. CRUMBINE, M. D., *Secretary.*"

On May 7 a letter from Doctor Taylor, county health officer of Clark county, conveyed the information that there were a number of malignant cases of smallpox across the county line, in Oklahoma, several of whom had died, and that the people of his county, especially the city of Ashland, were clamoring for a state-line quarantine. Doctor Taylor requested that, if in the Board's opinion it was necessary, such quarantine be established. Investigation of the matter brought the information that the situation was not so serious as had been alleged, and that the health authorities in Oklahoma had the disease under control. The request for state-line quarantine was therefore denied.

A communication from Burrton conveyed the information that a smallpox patient had gone from Kansas City to Burrton on the Santa Fe train, and had succeeded in spreading the disease in that city as well as infecting the cars in which he rode. A letter asking the county health officer of Harvey county to confirm the diagnosis was promptly responded to, with a confirmation of the allegations made in the letter of complaint, whereupon the general manager of the Santa Fe was notified to locate these coaches and have them fumigated, to which he replied that the fumigation and disinfection had been done. Several weeks later a second case occurred going from the same city. I am glad to say the railroad company heartily responded to the request for fumigation.

On May 16 the following letter was received:

"ST. JOHN, May 15, 1905.

"*Dr. S. J. Crumbine, Topeka, Kan.:*

"DEAR DOCTOR—As city health officer of St. John, I have the problem of locating some cesspools for draining water from the streets. We are considering placing them in the public square, around which the town is built, but I don't know the advisability of placing these pools in city limits, or what bearing the law may have on the subject.

"Our water-supply is entirely from the sheet water about twenty feet below the surface, practically all sand soil. No pump closer than 150 feet or more from the pools. If this comes under your jurisdiction, Doctor, I will be glad to have your advice on the subject. J. T. MCDONALD."

Professor Marvin's opinion was asked in regard to the matter, and following is his report:

"*Dr. S. J. Crumbine, Topeka, Kan.:* "LAWRENCE, May 17, 1905.

"MY DEAR DOCTOR—I would under no consideration approve of any plan involving cesspools under such conditions as outlined in Doctor McDonald's letter. Of course I know nothing about the town of St. John, or the possibilities of drainage there. In a general way, cesspools in a thickly settled section of any city should be regarded as dangerous. Even if they are not intended for the reception of sewage, sooner or later they would undoubtedly be used for such. In the heart of a city even the surface-water of the street is too much polluted to be turned into any pool in such sandy soil as evidently exists in St. John, with its sheet-water only twenty feet below the surface and that water a common source of supply. The only proper method of dealing with the problem would be through a system of pipe sewers, and this ought to be urged onto the town with emphasis.

Respectfully yours, F. O. MARVIN."

In the report of contagious diseases for April from Gove county there were three cases of epidemic cerebro-spinal meningitis. A letter to Doctor McNaughton, county health officer, requesting that he give me the details and symptomatology of the cases in order that there be no mistake as to the nature of the disease, elicited the following reply:

"*Dr. S. J. Crumbine, Topeka, Kan.:* "GOVE CITY, May 17, 1905.

"DEAR DOCTOR—Yours of the 15th at hand. The cases of meningitis we had were all in one family. The parents came to Gove City about March 1 from Phillips county, are very poor, and did not have enough to eat, I think—were on the county when sick. I have no idea of the source of contagion House was thoroughly fumigated, and children are as well as usual now. Will give history of cases as thoroughly as I can.

"*First case.*—Child, seven years, female, took suddenly sick about March 27 with severe headache and pain in back of neck, some fever and vomiting. No doctor called; recovered in about three days.

"*Second case.*—Child, nine years, female, took sick April 2, about ten A. M., with severe pain in back of head and neck, with vomiting. Child lost consciousness on the morning of the 3d. Dr. J. H. McNaughton was called the evening of the 3d and found a temperature of 103, moaning, constipation, vomiting, child still unconscious, but seemed to be in pain. Vomited once during the evening, put its hands to its head. The 4th of April the child was worse, fever lower, retraction of head, involuntary evacuation of bowels and bladder; died about seven P. M. April 4.

"*Third case.*—Took sick about April 7, was about the same as first child taken sick. This was a child about four years of age. No eruption and did not follow an eruptive fever. I consider it, as reported, epidemic cerebro-spinal meningitis. Yours respectfully, J. F. MCNAUGHTON."

REPORT OF SECRETARY EMBALMERS' EXAMINING COMMITTEE FOR JULY.

"OLATHE, KAN., July 1, 1905.

"*S. J. Crumbine, Secretary, M. D., Topeka, Kan.:*

"DEAR SIR—From the examination held in Topeka, June 26, 1905, I desire to make the following report, which you will please accept as correct:

Total number examined	40
Reexamined	1
Total	39
Number passed	18
Number failed to pass	22
Total	40
Applications on certificates from other states	4
Certificates granted	22
Examination fees received	43

Respectfully submitted. T. J. KEAN, *Secretary.*"

JUNE.

"OLATHE, KAN., June 1, 1905.

"*To the President, Officers and Members of the State Board of Health:*

Received for examination fees (fourteen)..............	$70 00
Paid to treasurer..	70 00

From the Wichita examination, February 13, 1905.

Respectfully submitted. T. J. KEAN."

Following are the bulletins issued for February, March, April and May. From the reports received from the various counties for the month of May, it will be seen that the state of health is exceptionally good, that epidemic disease has well nigh abated, giving promise for a more healthful condition in the future.

"KANSAS STATE BOARD OF HEALTH,
CAPITOL BUILDING, TOPEKA, March 14, 1905.

"The following contagious and infectious diseases were reported to this office for the month of February, 1905:

DIPHTHERIA.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Anderson..................	4	0	Republic..................	5	0
Cherokee..................	2	0	Wyandotte..................	5	0
Doniphan..................	1	1	Kansas City..................	5	1
Jackson..................	3	1	Leavenworth city..............	7	1
Montgomery..................	4	0	Topeka city..................	5	1
Nemaha..................	1	0			
Phillips..................	2	0	Totals..................	44	5

SCARLET FEVER.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Cherokee..................	1	0	Nemaha..................	3	0
Clay..................	12	0	Pawnee..................	2	0
Decatur..................	3	0	Phillips..................	12	0
Doniphan..................	1	1	Pratt..................	2	0
Jackson..................	8	0	Rawlins..................	1	1
Kingman..................	8	0	Reno..................	8	0
Lincoln..................	5	1	Republic..................	18	0
Logan..................	3	0	Shawnee..................	1	1
Lyon..................	7	0	Kansas City..................	1	0
Marion..................	8	0	Leavenworth city..............	1	0
McPherson..................	20	0	Topeka city..................	12	0
Marshall..................	6	0			
Mitchell..................	2	0	Totals..................	182	4
Montgomery..................	2	0			

SMALLPOX.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Atchison..................	2	0	Marshall..................	11	0
Chase..................	2	0	Miami..................	100	2
Cherokee..................	6	1	Mitchell..................	18	0
Clay..................	1	0	Montgomery..................	1	0
Crawford..................	82	0	Nemaha..................	1	0
Doniphan..................	3	0	Ness..................	60	0
Douglas..................	1	0	Phillips..................	5	0
Ellis..................	20	0	Rawlins..................	23	0
Graham..................	40	0	Reno..................	13	0
Gove..................	21	1	Republic..................	5	0
Harvey..................	8	0	Russell..................	23	0
Jackson..................	3	0	Saline..................	40	0
Kingman..................	40	0	Washington..................	9	0
Labette..................	2	0	Wyandotte..................	1	0
Lane..................	3	0	Kansas City..................	1	0
Lincoln..................	22	0	Topeka city..................	1	0
Logan..................	4	0			
Lyon..................	53	0	Totals..................	689	4
Marion..................	116	0			

TYPHOID FEVER.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Crawford..................	2	1	Kansas City..................	31	5
Douglas..................	4	0	Leavenworth city..............	2	2
Edwards..................	1	1	Topeka city..................	2	2
Labette..................	1	1			
Nemaha..................	1	0	Totals..................	44	12

S. J. CRUMBINE, M. D., *Secretary.*"

"Kansas State Board of Health,
Capitol Building, Topeka, April 10, 1905.

"*To County and City Health Officers:*

"Dear Doctor—To-day is the twentieth anniversary of the institution of the State Board of Health. Reviewing the work of the Board for this period of time, it can be said that much good has been accomplished in the way of suppression of epidemic diseases, and of a more thorough organization of the sanitary forces of the state.

"We believe it has also been instrumental in bringing into closer relationship the various physicians in their respective communities by an attitude of cooperation in sanitary and quarantine measures. This feature was illustrated perhaps more forcibly in June, 1904, when, for the first time in the history of the medical profession of Kansas, a meeting of the State Board of Health, together with the county health officers of the state, brought together in professional and social intercourse the various schools of practice. This spirit of tolerance is certainly to be commended, for just in proportion to this spirit of tolerance and cooperation will be brought into effective action the various sanitary measures in the communities by a cordial cooperation with those who have to do with such measures, namely, the physicians.

"I desire once more to call the attention of county health officers to the matter of keeping a faithful record of all births and deaths occurring in their county, giving names, dates, places, etc. This record-book should also comprehend a faithful record of all epidemics of contagious diseases, together with an abstract of such reports as are sent to this office. There are many times when these records are of very great value, not only from a statistical and medical standpoint, but from a pecuniary standpoint, in the settlement of estates, etc.

"The reports received for the month of March indicate an increase of all epidemic contagious diseases, particularly that of smallpox, and it is urged that disinfection of all infected places and things be thorough and complete, that the epidemic may be controlled and not break out again upon the arrival of cold weather next fall. The quarterly reports that were formerly made have been discontinued since this Board has required monthly reports. This, however, emphasizes the necessity of keeping an accurate record, as above suggested, that the annual report of births, deaths, marriages, etc., may be accurately given.

"Now that spring is upon us and that warm weather may be anticipated very soon, it becomes the duty of the health officer to take a sanitary survey of his county, recommending the cleaning of stables, alleys, feed-lots, etc., the burning of refuse material, and a general sanitary cleaning up of his entire county or city. It is suggested that notice be published in the official county paper to that effect, together with a visit of inspection through the various parts of the county, in order that the best possible sanitary conditions may prevail, and the community be thereby protected from preventable diseases.

"The following contagious and infectious diseases were reported to this office for the month of March:

CONSUMPTION.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Bourbon	8	8	Nemaha	2	2
Cherokee	4	4	Neosho	10	10
Coffey	2	2	Pottawatomie	1	1
Crawford	6	6	Riley	1	1
Dickinson	1	1	Sedgwick	4	*0
Ellsworth	1	1	Shawnee	3	0
Franklin	8	3	Thomas	1	1
Geary	1	1	Kansas City	50	17
Lane	1	1	Leavenworth city	7	7
Lyon	23	14	Topeka city	4	4
Marshall	1	1			
Mitchell	3	8	Totals	137	86

SCARLET FEVER.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Allen	3	0	**Ottawa**	7	0
Cherokee	4	0	**Pawnee**	6	0
Clay	3	2	**Pottawatomie**	1	0
Cloud	3	0	**Pratt**	3	0
Crawford	4	1	**Reno**	3	0
Decatur	2	0	**Republic**	7	0
Ellis	15	2	**Rice**	2	0
Geary	3	0	**Riley**	4	0
Hamilton	1	0	**Rooks**	4	0
Jewell	2	0	**Sedgwick**	2	1
Kingman	2	0	**Shawnee**	3	0
Labette	2	0	**Sumner**	2	0
Leavenworth	20	1	**Thomas**	3	0
Logan	3	0	**Washington**	1	0
Lyon	8	1	**Woodson**	7	0
Marion	3	0	**Wyandotte**	4	0
Marshall	3	1	**Kansas City**	4	0
Miami	1	0	**Topeka city**	17	0
Mitchell	1	0			
Nemaha	3	0	**Totals**	166	9

SMALLPOX.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Allen	17	0	**Miami**	25	0
Bourbon	40	0	**Mitchell**	16	0
Cherokee	31	3	**Montgomery**	4	0
Clay	1	0	**Nemaha**	26	0
Cloud	25	0	**Neosho**	40	0
Crawford	60	0	**Ness**	23	0
Dickinson	3	0	**Norton**	6	0
Edwards	8	0	**Ottawa**	12	0
Ellis	25	0	**Pottawatomie**	42	0
Ellsworth	18	0	**Reno**	2	0
Franklin	22	0	**Republic**	11	0
Geary	195	0	**Rice**	1	0
Gove	8	0	**Riley**	1	0
Graham	2	0	**Rooks**	21	0
Greenwood	2	0	**Russell**	11	0
Jewell	1	0	**Saline**	44	0
Kingman	20	0	**Sedgwick**	4	0
Kiowa	2	0	**Shawnee**	3	0
Labette	5	0	**Sheridan**	20	0
Linn	49	1	**Woodson**	3	0
Lincoln	25	0	**Kansas City**	14	0
Lyon	68	1	**Leavenworth city**	1	0
Marion	150	0			
Marshall	21	0	**Totals**	1123	5

DIPHTHERIA.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Allen	3	0	**Sumner**	1	0
Crawford	5	0	**Washington**	6	1
Geary	9	1	**Wyandotte**	8	0
Leavenworth	7	0	**Kansas City**	8	0
Nemaha	9	3	**Topeka city**	5	1
Riley	1	0			
Shawnee	1	0	**Totals**	63	6

TYPHOID FEVER.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Crawford	1	1	**Nemaha**	2	1
Bourbon	1	0	**Neosho**	2	0
Douglas	9	1	**Pottawatomie**	1	0
Edwards	2	0	**Kansas City**	75	11
Franklin	2	0			
Lyon	1	0	**Totals**	97	14
Marshall	1	0			

S. J. CRUMBINE, M. D., *Secretary.*"

"KANSAS STATE BOARD OF HEALTH,
CAPITOL BUILDING, TOPEKA, May 15, 1905.

"The following contagious and infectious diseases were reported to this office for the month of April:

SMALLPOX.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Allen	2	0	Ottawa	6	0
Bourbon	15	0	Phillips	3	0
Brown	17	0	Pottawatomie	9	0
Cherokee	14	3	Pratt	5	0
Cloud	10	0	Republic	19	0
Coffey	5	0	Riley	5	0
Comanche	8	0	Rooks	7	0
Crawford	91	0	Russell	10	0
Douglas	13	0	Saline	9	0
Ellsworth	23	0	Sedgwick	1	0
Geary	14	0	Shawnee	1	0
Graham	2	0	Sheridan	6	0
Hamilton	1	0	Smith	9	0
Johnson	1	0	Stafford	4	0
Labette	3	0	Sumner	1	0
Lyon	55	0	Thomas	1	0
Marion	25	0	Trego	4	0
McPherson	8	0	Washington	5	0
Miami	24	0	Wyandotte	3	0
Mitchell	5	0	Kansas City	27	0
Montgomery	6	0	Leavenworth city	5	0
Nemaha	8	0	Topeka city	27	0
Neosho	42	1			
Ness	15	1	Totals	595	5
Norton	5	0	Reported for March	1123	5
Osborne	16	0			

SCARLET FEVER.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Allen	1	0	Neosho	3	0
Bourbon	1	0	Norton	2	0
Brown	9	0	Pawnee	1	0
Chautauqua	3	0	Phillips	7	0
Cherokee	2	0	Rawlins	3	0
Clay	8	0	Reno	1	0
Cloud	3	0	Republic	8	0
Cowley	3	0	Riley	5	0
Dickinson	10	0	Rooks	1	0
Ellsworth	2	0	Russell	5	0
Jefferson	3	0	Shawnee	2	1
Johnson	2	0	Smith	5	0
Kingman	1	0	Sumner	1	0
Leavenworth	10	3	Thomas	1	0
Logan	2	0	Wyandotte	1	0
Marshall	3	0	Kansas City	3	0
McPherson	7	0	Topeka city	10	2
Meade	2	0			
Mitchell	2	0	Totals	139	6
Nemaha	6	0	Reported for March	166	9

MEASLES.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Cherokee	1	0	Thomas	2	0
Finney	4	0	Trego	15	0
Harvey	4	0	Wyandotte	7	0
Montgomery	1	0	Kansas City	17	0
Seward	2	0			
Sumner	1	0	Totals	54	0

DIPHTHERIA.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Allen	2	0	Sumner	1	0
Chautauqua	6	1	Wyandotte	11	0
Cherokee	1	1	Kansas City	12	3
Clay	2	1	Leavenworth city	14	3
Crawford	6	1	Topeka city	11	0
Kingman	1	0			
Montgomery	1	1	Totals	69	12
Reno	1	1	Reported for March	63	6

EPIDEMIC CEREBRO-SPINAL MENINGITIS.

County.	*Cases.*	*Deaths.*
Gove	3	1

TYPHOID FEVER.

County.	*Cases.*	*Deaths.*
Bourbon	1	1
Chase	2	0
Cherokee	1	1
Douglas	4	2
Edwards	1	0
Lyon	6	0
Neosho	1	1
Pawnee	1	1
Phillips	1	0
Smith	4	0
Thomas	1	0
Thomas	1	0
Kansas City	35	4
Leavenworth city	1	1
Topeka city	3	3
Totals	65	13
Reported for March	97	14

CONSUMPTION.

County.	*Cases.*	*Deaths.*
Bourbon	1	1
Brown	1	1
Chase	3	0
Cherokee	5	5
Coffey	1	1
Edwards	2	2
Geary	1	1
Harper	1	1
Jackson	1	1
Labette	1	1
Leavenworth	1	0
Ness	1	0
Osage	1	1
Osborne	2	0
Pratt	3	0
Rawlins	1	0
Russell	1	1
Sedgwick	2	0
Shawnee	2	2
Stafford	1	1
Sumner	2	2
Kansas City	35	5
Leavenworth city	3	3
Topeka city	1	1
Totals	73	28
Reported for March	187	86

S. J. CRUMBINE, M. D., *Secretary.*"

"KANSAS STATE BOARD OF HEALTH,
CAPITOL BUILDING, TOPEKA, June 20, 1905.

"The following contagious and infectious diseases were reported to this office for the month of May:

SMALLPOX.

County.	*Cases.*	*Deaths.*
Allen	6	0
Anderson	1	0
Atchison	3	0
Barton	1	0
Bourbon	6	0
Brown	10	0
Butler	6	0
Cherokee	9	0
Cloud	5	0
Coffey	8	0
Crawford	47	1
Doniphan	1	0
Douglas	16	0
Ellis	4	0
Ellsworth	5	0
Franklin	4	0
Geary	17	0
Graham	20	0
Greenwood	2	0
Harper	1	0
Harvey	4	0
Jefferson	6	1
Johnson	5	0
Leavenworth	2	0
Logan	6	0
Lyon	17	0
Marion	10	0
McPherson	2	0
Mitchell	3	0
Montgomery	21	0
Morris	4	0
Neosho	4	0
Norton	60	0
Osage	2	0
Osborne	5	0
Ottawa	5	0
Phillips	1	0
Pottawatomie	3	0
Reno	7	0
Republic	1	0
Riley	10	0
Rooks	1	0
Russell	4	0
Saline	4	0
Sedgwick	10	0
Sheridan	2	0
Sumner	1	0
Trego	2	0
Wabaunsee	45	0
Washington	4	0
Wyandotte	17	0
Leavenworth city	2	0
Topeka city	10	0
Totals	452	2
Reported for January	713	2
" February	689	4
" March	1123	5
" April	595	5

SCARLET FEVER.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Allen	1	0	Reno	7	0
Brown	4	0	Republic	5	0
Chautauqua	2	0	Rice	1	0
Decatur	1	0	Riley	7	0
Dickinson	4	2	Sedgwick	1	0
Franklin	1	0	Sumner	1	0
Greenwood	2	0	Washington	1	0
Jefferson	1	0	Kansas City	5	0
Marshall	1	0	Topeka city	11	1
McPherson	30	0			
Mitchell	1	0	Totals	99	6
Morris	3	2	Reported for January	149	9
Ottawa	2	0	" February	132	4
Pawnee	1	0	" March	166	9
Phillips	1	0	" April	139	6
Rawlins	5	1			

MEASLES.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Butler	1	0	Sherman	2	0
Ellis	3	0	Wyandotte	2	0
Finney	1	0	Kansas City	15	0
Kearny	2	0	Topeka city	2	0
Marshall	3	0			
Meade	1	0	Totals	37	0
Seward	5	0	Reported for April	54	0

DIPHTHERIA.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Allen	3	0	Leavenworth city	2	0
Chautauqua	5	1	Topeka city	6	1
Douglas	1	0			
Lyon	1	1	Totals	30	5
Montgomery	1	1	Reported for January	55	10
Russell	1	0	" February	44	5
Washington	3	0	" March	63	6
Kansas City	7	1	" April	139	6

TYPHOID FEVER.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Bourbon	2	0	Rawlins	1	0
Chautauqua	1	0	Smith	5	2
Douglas	3	1	Kansas City	20	3
Greenwood	3	1	Leavenworth city	1	0
Labette	1	0			
Logan	1	0	Totals	47	8
Lyon	3	0	Reported for January	14	3
Morris	3	0	" February	44	12
Osage	1	1	" March	97	14
Pawnee	1	0	" April	65	13
Phillips	1	0			

CONSUMPTION.

County.	*Cases.*	*Deaths.*	*County.*	*Cases.*	*Deaths.*
Bourbon	6	4	Neosho	3	3
Chase	7	3	Osborne	2	0
Cherokee	1	1	Ottawa	1	0
Cloud	1	1	Pawnee	1	1
Coffey	1	1	Rawlins	1	0
Crawford	5	5	Rice	1	1
Doniphan	2	1	Riley	2	1
Edwards	1	0	Sedgwick	7	0
Ellsworth	1	0	Smith	2	2
Franklin	3	3	Sumner	2	2
Geary	1	1	Wallace	2	0
Harper	1	1	Kansas City	30	9
Jackson	4	4			
Kearny	1	1	Totals	93	49
Labette	1	1	Reported for March	137	86
Logan	1	0	" April	73	28
Montgomery	1	1			
Morris	1	0			
Nemaha	3	2			

S. J. CRUMBINE, M. D., *Secretary.*"

Minutes of the First Quarterly Meeting.

The first quarterly meeting of the State Board of Health was held in the office of the secretary, Thursday, September 14, 1905. The meeting was called to order by the president at 1:45 P. M., with the following members present: Doctors Carver, Mills, Bentley, Locke, Alexander, Lerrigo and Carlile, and Mr. Welch. Absent, Doctors Golden and Scott. Doctor Greenfield, W. J. V. Deacon, and Professor Bailey, of the advisory board, were present.

The minutes of the previous meeting were read and approved. The secretary then read his report, which upon motion was received and placed on file.

The special report of the statistician, Mr. Deacon, was then read, giving a summary of a painstaking inquiry from all the states and territories in the United States as to what steps, if any, had been taken in the establishment of state sanatoria for tuberculous poor. The report of Mr. Deacon was exhaustive, and showed a clear comprehension of the question. He recommended that a committee be appointed to draft a suitable bill for presentation to the next legislature for the erection of a state institution for consumptives. On motion the report was received and placed on file. Following is the report in full:

TOPEKA, KAN., September 10, 1905.

To the Kansas State Board of Health:

GENTLEMEN—Following the suggestion of Dr. S. J. Crumbine, secretary, I have endeavored to secure some information relative to institutions maintained by the various states for the treatment of incipient pulmonary tuberculosis.

In following this line of inquiry I have obtained some information which I herewith submit for your consideration. Twenty-two states maintain no institutions of this character. Four states have referred inquiries elsewhere without answering any of the questions submitted. Five states either aid or have semipublic institutions. Six states have appointed commissioners to examine into the subject or are otherwise agitating the matter. Seven states have institutions either established or have passed laws for their establishment.

Dividing the states into five classes, we find, as follows:

No institutions	22	49.8	per cent.
Unsatisfactory replies	4	9.0	"
State aids or private	5	11.8	"
Interested	6	13.8	"
Have institutions	7	16.1	"
Totals	44	100	"

The states which aid or have semipublic institutions are as follows:

CONNECTICUT aids two hospitals which specialize in this work, one at New Haven and one at Hartford.

DELAWARE maintains a ward at the State Hospital for the Insane for inmates afflicted with tuberculosis.

MAINE appropriates $15,000 per annum to aid a semipublic institution.

COLORADO and **IOWA** both have institutions not supported or assisted by the state.

The following states show an interest in the subject:

CALIFORNIA.—Last legislature passed a bill through both houses, but it was "pocket" vetoed by the governor.

VIRGINIA expects to take the matter up at the next session of the assembly.

KENTUCKY had a bill before the last session of the legislature, but was unable to secure its passage.

VERMONT, OHIO and **INDIANA** all have commissions appointed by the legislature to investigate the needs of such an institution and report at the next session of the legislature, and there can be little doubt that the recommendation in each case will be favorable to the establishment, in some form or another, of such a sanatorium.

Of the states which have passed laws for such institutions, Rhode Island, New Jersey, Michigan, Wisconsin and Missouri are all new, and beyond the amount of the appropriation no statistics are available. Massachusetts and New York alone have been thoroughly established, and in New York state the published reports cover but such a short period that they are of small value.

Below I give in detail what has been done in each state:

"MASSACHUSETTS.

(Excerpts from report.)

"Budget for next year—		
Maintenance, allowing for expected increase		$105,000 00
Buildings and roads		19,000 00
Number of patients October 1, 1903		261
Admitted		687
Discharged		692
Deaths		4
Daily average		257"
"In six years 2843 patients have been treated.		
Cost of food per day per patient		57 cents
Total daily ration, all inmates		41 cents
Applicants examined		1,754
Admitted	817,	46 per cent.
Refused	639,	36 "
Doubtful	298,	17 "
Total current expense was		$125,124 90
Average annual cost per patient	$486 86	
Average weekly cost per patient	9 36	
Deduct amount received from patients		45,752 45
Leaving an expense to the commonwealth of		$79,372 45
Weekly average		5 93"

"Visiting Physician's report:	
Whole number discharged	696
Not considered—remained less than one month	120
Considered in this report	576

Per cent.		*Inc.*	*Mod. adv.*	*Adv.*	*Total.*
44.8	Arrested and apparently cured	198	48	12	258
47.7	Improved	53	104	118	275
7.4	Not improved (including four deaths)	10	15	18	43
	Totals	261	167	148	576

Of the above number twenty were somewhat doubtful tubercular, the balance were positive tubercular."

MISSOURI.—Passed a law at the last session of the legislature making an appropriation of $100,000 to purchase ground and erect buildings for a state sanatorium. No provision appears in the bill, however, for maintenance.

CALIFORNIA.—Senate bill No. 706, passed by both houses of the last legislature, made provision for an appropriation of $150,000 to cover cost of site, buildings and first year's maintenance. This bill failed to become a law owing to the failure of the governor to take action thereon.

MICHIGAN.—Provides in a bill passed by the last legislature a sum of $20,000 for site and maintenance the first year and $10,000 for the second year; and provides that patients able to pay must do so, and the indigent to be received without pay only on a certificate from the county poor commissioner of their inability to do so.

Some further provisions relative to the use of state lands evidently increases this appropriation materially, but to what extent I am unable to determine without examination of the state laws.

NEW YORK.—This sanatorium was not opened to patients until July 1, 1904, although established in 1900.

The report in my possession covers only a period of three months, from July 1 to October 1, 1904. This report shows that when completed the institution will have accommodations for 120 inmates. In the period reported forty patients had been admitted, one discharged, leaving thirty-nine in the institution for an average of three months.

The financial report is of no value as regards current expense, as it covers salaries, etc., for a period of twelve months, and it cannot be determined therefrom the average cost of maintenance per patient. It shows, however, an expenditure of $111,540.54 for buildings and improvements, and asks an appropriation of $81,250 for the fiscal year ending September 30, 1905.

WISCONSIN.—This state passed a law on June 15, 1905, which to my mind contains many valuable features. W. J. V. DEACON.

The bacteriologist then gave her report. She reported having made sixty examinations for the months of July and August, thirty-nine of which were for tuberculosis, eleven for diphtheria, and ten examinations of water.

The recommendations of the secretary were then taken up, and the following motion was adopted concerning the yellow-fever situation:

This Board indorses the provisional quarantine, and is satisfied that it is all that is necessary at the present time.

Upon motion, the following was adopted: That this Board indorse the trans-Mississippi movement toward uniform car fumigation legislation, and that we instruct our secretary to do what he can to further the organization and the work along the lines suggested in his report.

The application of W. M. McClure for disinterment of the body of Millard F. Mattern, in the cemetery at Marysville, who died of membranous croup, was granted by the Board; also the application of J. A. Harouff for disinterment of the body of North W. Morrow, in the Atchison cemetery, who died of diphtheria, with the provision that the remains be enclosed in an air-tight zinc, tin or copper-lined casket; this being in accordance with the rules of the Board that disinterment of bodies dying from diphtheria or scarlet fever can only be granted by the State Board of Health while in session.

The matter of the appeal of Mr. J. W. Black, of Frontenac, from the action of the embalmers' examining committee, who had refused to issue him a certificate, was then taken up. His examination papers were carefully looked over, and a motion was adopted that the Board uphold the action of the embalmers' committee.

In accordance with the recommendation of Mr. Deacon, Doctor Mills introduced the following resolution, which was adopted: That Doctor Lerrigo, Doctor Crumbine and Mr. Deacon be appointed a committee to draft the bill in relation to the establishment of a tuberculosis sanatorium, and report at the next quarterly meeting.

Communications from W. B. Hancock, of Dallas, Tex., and E. T. Willhoit, of Platte City, Mo., were then read, in which was asked the Board's approval of a railway-car ventilator and railway-coach cuspidor. Upon motion, the secretary was instructed to notify these gentlemen that the Board could not give their official indorsement of these inventions.

Mr. Kean, secretary of the embalmers' committee, then read the following report:

OLATHE, September 9, 1905.

To the Officers and Members of the State Board of Health:

GENTLEMEN—As secretary of the embalmers' examining committee, I desire to make the following report:

Number of examinations held since last report	3
Number of applicants	56
Number reexamined	8
Number who failed	22
Number certificates granted on certificates from other states	7
Total number certificates granted	49
Amount received for examination fees	$315 00
Amount received for two-dollar renewals to date	654 00
Total receipts	$969 00

Paid to treasurer as follows:

February	16,	Remitted	$31 50
June	12,	"	20 05
June	21,	"	145 00
June	29,	" cash, drafts, and warrants	360 30
July	5,	"	97 00
July	21,	"	70 00
August	17,	"	33 10
September	9,	"	123 90
September	9,	Balance in hands of secretary—stamps, cash, etc	129 15
Total			$969 00

The matter of a complaint against Charles Whitley, of Solomon, a license holder, by the Union Pacific Railway Company, for the shipment of a disinterred body which was put off at Abilene, has been thoroughly investigated, and Mr. Whitley exonerated. After some correspondence President Barkley made the trip to Solomon, and after diligent inquiry found that both Mr. Whitley and the railroad company's agent at that point had been made the victims of a drunken tinner who prepared the metal-lined shipping-box in which the body was put.

There have been a number of cases of violations of the rules in shipments of dead bodies by persons other than the holders of licenses, most of which have been adjusted satisfactorily.

The case of complaint of injustice by T. J. Cornelson, of Dodge City, resulted in Mr. Cornelson's being reexamined and granted a license.

Respectfully submitted. T. J. KEAN.

The matter of election of the members of the examining committee, which should have taken place at our annual meeting, but which was postponed on account of lack of time, was then taken up and the secretary read the following names as applicants: D. R. Maltby, McPherson; J. A. Harouff, Atchison; A. G. Mueller, Wichita; J. W. Sexton, Leavenworth; J. S. Johnson, Osawatomie; N. C. Yost, Hiawatha; J. T. Barkley, Topeka; J. B. Hinthorn, Hiawatha.

Doctor Alexander moved that the Board go into executive session for the purpose of balloting for the members of the committee, which motion prevailed. A motion that the election proceed by balloting was then taken with the result that Maltby, Mueller and Barkley were declared elected for a term of two years.

The following bills were audited and allowed:

C. H. Lerrigo	$5 00
B. J. Alexander	11 60
H. M. Bentley	17 50
C. D. Welch	24 00
J. B. Carlile	22 00
G. E. Locke	9 33
J. B. Carver	17 85
E. P. Mills	9 00
Total	$116 28

Upon motion, the Board adjourned.

SECRETARY'S REPORT.

TOPEKA, September 14, 1905.

To the Members of the State Board of Health:

GENTLEMEN—The day following our last quarterly meeting, in writing up the minutes, it was discovered that the election of our advisory board had been overlooked in the rush of the previous day. The secretary therefore sent out the following letter to the members:

"TOPEKA, June 29, 1905.

"DEAR DOCTOR—Because of lack of time and the general rush at our annual meeting, the matter of our advisory board was entirely overlooked, and as we are in need of having some stationery printed it was thought best to take the matter up with the members of the Board at this time that they might express their desires, which, if unanimous, will be recorded as an election. As the new law provides that the bacteriologist be appointed by the secretary, there remain, then, the chemist and sanitary engineer to be elected, and if it is the pleasure of the members to continue Professors Bailey and Marvin in those positions, please so indicate in your reply.

S. J. CRUMBINE, *Secretary.*"

In response to this letter, it was the unanimous vote that the old advisory board be reelected, which is, Prof. F. O. Marvin, sanitary adviser and civil engineer, and Prof. E. H. S. Bailey, chemist. Mr. Deacon also received a unanimous vote for statistician of the Board.

In accordance with the law passed by the last legislature, the secretary appointed Dr. S. E. Greenfield bacteriologist for the ensuing year and Miss Bernice Vreeland as the chief clerk and stenographer.

On July 8 the following petition was received from the county board of health of Chautauqua county:

"*To the Kansas State Board of Health:*

"We, the local board of health of Chautauqua county, Kansas, beg to submit to your honorable body the following report: About March, 1905, there was erected and constructed in a street of the city of Sedan, in Chautauqua county, Kansas, a large tank for sewage, against the will and without the consent of the citizens and residents of said city in the locality of said sewage tank.

"That there has been emptied and continues to be emptied into said sewage tank the sewage of a large part of said city.

"That said tank is kept filled with excreta, residuum, and offal matter of a like noxious and poisonous nature.

"That there arises from said tank and its said contents unbearable stenches and odors that render the same a public nuisance.

"That said tank is situated in a thickly populated portion of said city, and within the limits of the same.

"That a large number of the citizens of said city, living in the immediate locality of said tank, have petitioned this board that the said nuisance be abated and removed, a copy of which petition is hereto attached and made part of this report.

"That it is the opinion and judgment of this board that the said tank and its contents are a public nuisance and the maintenance of the same at its present location is highly dangerous to the lives and health of said city, and ought to be removed without delay.

"And we, therefore, earnestly recommend that your honorable body immediately take all necessary legal action to remove said tank, in the event that your honorable Board should concur in this our conclusion, after your Board shall have made such independent investigation as you may deem necessary. Respectfully submitted.

THOMAS H. MELLOW, *County Commissioner.*
W. A. GRAY, *County Commissioner.*
W. T. COURTWRIGHT, *County Health Officer.*

"Done at Sedan, Kan., this 5th day of July, 1905."

(Copy.)

"*To the Board of Health of Chautauqua county, Kansas, and to the Health Officer thereof:*

"Your petitioners, the undersigned citizens and residents of the city of Sedan, in Chautauqua county, Kansas, respectfully petition your honorable body and represent:

"That on or about the —— day of March, 1905, there was erected, built and constructed a large sewage or so-called septic tank in and upon the north side of Laurel street in said city, between Jackson and Harrison streets, at a point where said Laurel street crosses a large ravine or creek; and that said sewage or so-called septic tank has been ever since kept and maintained at said point, and is still kept and maintained.

"Your petitioners further represent that said sewage tank has been and is used as a receptacle for the sewage of said city, and there has been and is being emptied into the same foul, poisonous and noxious matter and residuum, offal and sewage, by reason of all of which there is emitted from said tank foul, noxious, malignant and poisonous odors and gases, that pass over and through and permeate all parts of the said city in every direction from said tank for a long distance therefrom; and the maintenance of said tank, as herein set out, has polluted and poisoned the water in said locality, and has impregnated the same with the germs of disease; and by reason of which the lives and health of these, your petitioners, and many others who reside in the vicinity of said tank are greatly endangered, and sickness and unhealthfulness have resulted by reason of the maintenance of said tank and its conditions as above set out.

"Your petitioners further say that on account of the matters herein complained of the homes and property of the said residents in the vicinity of said tank have greatly deteriorated in value, and some of them have been rendered worthless and unfit for human occupancy.

"Your petitioners further represent that the said tank is a nuisance, and unless the same is speedily abated and removed sickness and death will result therefrom.

"Your petitioners further represent that said tank is situated within the limits of said city, and within a resident portion thereof, and in a part of said city which is occupied by these petitioners and others, and in the vicinity of their homes, and that said vicinity is densely populated.

"Wherefore, your petitioners, the undersigned, pray that your honorable body and health officer thereof will take such steps as are by law provided to abate and remove the said nuisance, and to relieve your petitioners of the dangers, nuisances and wrongs herein complained of.

"This 13th day of June, 1905."

Signed by forty-two citizens.

On July 15, in company with the attorney for the Board, Mr. C. D. Welch, of Coffeyville, I went to Sedan to inspect the sewage system and septic tank operation of that city. Our report is embodied in the following letter:

"TOPEKA, KAN., July 18, 1905.

"*W. T. Courtwright, M. D., County Health Officer, Sedan, Kan.:*

"DEAR DOCTOR—In company with the Board's attorney, Mr. C. D. Welch, of Coffeyville, I visited Sedan for the purpose of investigating the complaint as brought to my notice in a petition sent by your local board of health to this office. Our expert sanitary engineer, Professor Marvin, was away on his summer vacation, or he should have been sent for the investigation instead of myself, as I do not claim to be an expert on septic-tank construction and operation.

"Arriving in your city on Saturday evening, July 15, and accompanied by a number of parties interested, we went to make a preliminary investigation of the conditions as complained of in the petition. When within about a half a block of the location of the tank I first discovered a foul and offensive odor arising therefrom. In the investigation made that evening and one made the following morning, we found that the filter-beds were not being properly flushed as originally designed, and that therefore they were not accomplishing the proper nitrification of the contents of the tank. It was discovered also, that the effluent which flowed into the ravine near by, while perfectly clear, had a distinct offensive odor.

"The city and citizens of Sedan should be commended for their effort to dispose of their sewage in a scientific manner, as it must be admitted that most, if not quite all of the cities in this state that have sewerage systems empty the sewage directly into the streams, which can have but one effect, that of polluting them. It must be admitted, however, that the location of this septic tank and filter-beds is a most unfortunate one, being so close by the residential portion of your city, for while theoretically there should be very little offensive odor from such plants if properly constructed and in perfect operation, yet practically there is more or less odor, which of necessity is of an offensive character. Therefore in consideration of that fact such plants should be located at such a distance from the residential portion of the city that before the odor would reach the nostrils of the people it would be inoffensive and unnoticed because of its dilution by the atmosphere.

"The petition alleges that the water in said locality has been poisoned and polluted and impregnated with the germs of disease. This cannot be determined without a bacteriological and chemical examination. You will therefore obtain one gallon of water from each of the two nearest wells, placing same in a sterile jug, sealing with wax, and express to Dr. S. E. Greenfield, 210 West Sixth street, Topeka, charges prepaid.

"That the gases that emanate from this septic tank are impregnated with the germs of disease and may produce typhoid fever and other bacterial diseases cannot be successfully maintained, as infectious or contagious diseases of that character are not conveyed through the medium of gas. Indeed it is doubtful whether even the nearest residence would get the gas in sufficient undiluted quantities as to produce any specific disease, and I am quite sure your citizens need apprehend no danger along that line. However, this proposition is true—that by the offensive odors which not only disturb the peace of mind of those inhaling same but blunt the appetite, compelling them to have their windows closed, as evidence was produced to that effect, would produce a debilitated and depressed condition of the system, which would make it an easy prey for any acute infection or disease to which they might be subjected, and therefore in that way it may be successfully argued that the septic tank as now operating is a menace to the health of the community. That it is an aggravated nuisance there can be no doubt, although at the time of my visit the odors were not particularly bad. That the operation of such a plant is necessarily attended with a deterioration of values in near-by property can be readily understood, but with that phase of the subject we have no concern.

"Quoting from the celebrated thousand-dollar prize essay on 'Preventive Disease,' as written by Dr. Wayne Babcock, of Philadelphia he says: 'Air contaminated from leaky drains and cesspools, or from decomposing organized matter, should not be permitted about or near dwellings, not because these contaminations directly produce disease, but because such unwholesome surroundings tend to depress the normal immunity of the body and to favor bacterial invasion.' Again he says, in speaking of sewers, sewer construction, and sewer-gas, that the 'men employed in sewerage systems and breathing sewer air many hours daily not infrequently exceed the average laborer in health and vigor,' showing that the inhalation of diluted sewer air does not produce an unhealthful condition in itself, unless inhaled in such large quantities and in an undiluted condition as to be toxic.

"It seems from the evidence offered that an admirable spirit has been displayed in an effort to correct any defects of construction or operation that might have been made, and it seems but just, if the city determines to continue the location of the tank at its present place, to allow sufficient time to elapse to prove their inability to make it operate, or to have a perfect-working plant. If after reasonable time has elapsed and the plant continues to give offense to the people, and if you are satisfied that it cannot be made to work properly, if you will notify me I will be glad to send Professor Marvin, our expert sanitary engineer, to your city, when he will make a thorough investigation of the tank. In the meantime, after a careful analysis of the water, if it is found that the water-supply has become infected, your duty will be plain to order an immediate abatement of the plant.

"Permit me to say, in passing, that I noticed several conditions in your city that, in my judgment, are quite as serious a menace to the health of your citizens, if not more so, than the odors emanating from this tank. I refer to the heaps of garbage and decomposing animal and vegetable matter back of several of the restaurants and in the alleys along the business portion of the town. In one place in particular the odor was quite as offensive as the odor from the tank, and on which there were swarms of flies feasting, that went from this pestilential nursery to alight and feast on the food of your citizens, carrying infection on their legs, wings, etc. I therefore order you, as county health officer, to see that these nuisances are abated immediately.

"In addition to the two gallons of well-water sent for examination, please include a small bottle of the water coming from the filter-beds as it empties into the ravine, and this also will be examined. The findings will be sent you as a subsequent part of this report.

"Assuring you of our desire to do everything in our power for the health of the citizens of your city, I am respectfully yours,

S. J. CRUMBINE, *Secretary.*"

In response to the request for samples of water for examination by the Board's bacteriologist, Doctor Courtwright sent four samples, which were examined by Doctor Greenfield, whose report is embodied in the following letter:

"TOPEKA, July 27, 1905.

"*W. T. Courtwright, M. D., Sedan, Kan.:*

"DEAR DOCTOR—The following is the report of examination of specimens of water sent by you:

"Specimen No. 1 showed colonies of germs too numerous to count, from one cubic centimeter of water; estimated number, 700. Odor of decomposition was marked. The findings in this water would condemn it were it not for the fact that a large cork was found floating at the top of the jug. This leads me to think that part of the contamination of this specimen might have come from error in preparation of specimen for shipping.

"Specimen No. 2 showed 180 colonies of germs per cubic centimeter. The number of colonies which liquefied the gelatin or from which they were grown was about twenty per cubic centimeter. There was no odor of decomposition. The findings in this specimen show that this water is good. The standard of purity for drinking water allows from 100 to 500 colonies of germs to the cubic centimeter, and the ratio of germs which liquefy the gelatin medium on which they grow should not be greater than 1 to 10. In this case the ratio is 20 to 180 or 1 to 9, which is not bad.

"Specimen No. 3 gave a strong odor of decomposition. The number of colonies was too numerous to count. The ratio between the germs which liquefied the gelatin and those which did not was 1 to 4. Findings in this specimen show that the water is bad.

"Specimen No. 4 showed number of colonies to be about 250 per cubic centimeter. The number liquefying the gelatin, about 30. There was no odor. Findings show that this water is good.

"When the time consumed in transportation is taken into consideration, and also the possibility of slight contamination during preparation for shipping, all of these specimens, excepting No. 3, would be classed as good drinking water. Very truly yours,

S. E. GREENFIELD, *Bacteriologist.*"

The Board's sanitary adviser and civil engineer, having not yet returned from his summer vacation at the time of the conclusion of this examination, a visit by him for the purpose of inspecting the construction of the septic tank could not be made. The county health officer was advised that his services might be had upon his return.

Subsequent reports from Doctor Courtwright convey the information that the operation of the tank has been suspended by an injunction granted in the district court.

On July 11 Dr. Charles Lowry, a member of this Board and one of the former secretaries, passed from this life to the great beyond. The doctor had not been a well man during the greater part of his life of sixty-four years, but during the past year and a half had been quite ill, most of the time suffering from great physical pain, nausea and nervous depression. He bore his suffering with great fortitude, and was cheerful and patient throughout the entire period of his long sickness.

Doctor Lowry was a man of great capabilities, had made a marked success of his life in a professional and financial way, and had endeared himself to a large circle of friends, not only in this city but in other places where he had formerly lived. As secretary and executive officer of this Board he had shown great skill in executive ability, and, as counselor and adviser in conducting the work of the Board as one of its members, he stood for conservative, yet progressive, action.

Letters and telegrams of notification of the time and place of the funeral were sent to each member of the Board. Dr. E. P. Mills offered the following resolutions of sympathy, a copy of which has been mailed to the grief-stricken wife:

"WHEREAS, The Great Physician in his infinite wisdom has seen fit to call from the scene of his earthly labors and to the rewards of the faithful one of his followers and one of our fellow members, Dr. Charles Lowry; and

"WHEREAS, The exacting and self-sacrificing labors of a busy and useful life are over, and rest has come at last; and

"WHEREAS, We, the members of the Kansas State Board of Health, of which our brother was long a useful and faithful member, and for nearly two years the efficient secretary and executive officer thereof, feeling the sore loss and sorrow that has come to us in the removal of the friendly face and wise counsels from among us; therefore, be it

"*Resolved,* That in this manner we express our appreciation for the years of faithful service in the interests of public health, of our own sense of personal loss, and our heartfelt sympathy with the bereaved wife: Be it further

"*Resolved,* That these resolutions be made a part of our record, and that a copy be sent to the wife of our brother.

"On behalf of the members of the Kansas State Board of Health.

S. J. CRUMBINE, M. D., *Secretary.*"

It having come to our notice that a young man broken out with smallpox had taken the Union Pacific train at Junction City and come to Topeka, the general superintendent was notified of the date and number of train, and requested to have the cars disinfected, which was immediately done.

On July 22 was issued No. 1 of volume 1 of the printed bulletin of the Kansas State Board of Health, a copy of which has been sent to each member of the Board. It is the purpose of the secretary to continue these monthly bulletins, and he bespeaks the cooperation, advice and assistance of the Board in the conduct of its management.

On August 1 the following letter was received from the general baggage agent of the Union Pacific Railway:

"COUNCIL BLUFFS, IOWA, July 29, 1905.

"*Dr. S. J. Crumbine, Topeka, Kan.:*

"DEAR SIR—On July 28 a disinterred body was shipped from Solomon to Bloomington, Ind., the body having been prepared by a licensed embalmer.

Our agent claims it was prepared in accordance with rule 8 of your instructions. This I doubt very much. The corpse was put off at Abilene on account of it smelling badly, and sent back to Solomon. Enclosed copy of my letter even date to agent at Solomon. Perhaps this is a matter that you would like to investigate. Yours truly, A. TRAYNOR."

(Copy.)

"*Mr. I. J. Bohn, Agent U. P. Rld. Co., Solomon, Kan.:*

"DEAR SIR—Your telegram July 28 regarding corpse for Bloomington, Ind., Mr. Lomax has telegraphed you regarding tickets.

"You state that body was prepared in accordance with rule 8, by licensed undertaker. Body was brought to depot shortly before train, and nothing wrong noticed, etc. I wish that you would read rule 8 again carefully and advise if the removal of this body had been approved by the state or provincial health authorities having jurisdiction where such body is disinterred, and if the consent of the health authorities of the locality to which the corpse had been consigned, had been obtained.

"I also desire to call your attention to rule 165, section F, baggage regulations, which positively prohibits the shipment of disinterred bodies until permission has been obtained from health authorities. If you accepted corpse for transportation without complying with the rules, you have laid this company liable; and unless the undertaker can give some good satisfactory explanation as to why he should attempt to ship a body without complying with the laws, I shall take the matter up through the State Board of Health of Kansas. I am perfectly willing that you should show this letter to the undertaker, for he surely must have known that he was violating the laws of the state if he did not comply fully with rule 8 issued by Secretary State Board of Health, 1904, of which you have a copy, also every undertaker in the state. Yours truly, A. TRAYNOR."

The secretary of the embalmers' examining committee was requested to investigate immediately and report his findings to this office. The result of this investigation brought to light the following facts: That the body had been shipped in accordance with the rules, so far as the undertaker and agent for the railroad were concerned, but the tinner who had undertaken to make the casket air-tight by soldering had failed to do so because of too much "booze." Mr. Traynor, the general baggage agent, was notified of the result of the investigation and the incident was closed.

On August 5 the statistician, Mr. W. J. V. Deacon, undertook the compilation of statistics concerning tuberculosis sanatoria. The result of this investigation will be embodied in a report to the Board by himself.

The matter of a state institution of this kind in Kansas is one which in my judgment should be heartily championed by this Board, as proof multiplies for the necessity of such an institution. I cannot help but mention again the pathetic letter received from Oskaloosa, which was printed in the August *Bulletin*, and which you have no doubt read. Such a case touches our hearts; the mother stricken with consumption, nursed by a daughter who took the disease and died within two months, another daughter coming to the rescue, the brothers fleeing for their lives; the neighbors and friends afraid to go into the house; without money or means for hiring a nurse; the second sister stricken with the disease, and following, the letter to the State Board of Health for help, is a picture which must appeal to each one of you as it has to me, and we as a Board utterly unable to help them. Surely this great state, blessed with material prosperity, cannot longer deny the cries of her tubercular poor. Let us unite in an effort to have the next legislature make a provision for taking care of these unfortunates.

On August 1 the secretary started on his annual vacation, but with some fear of his inability to remain in peace or quiet very long on account of the epidemic of yellow fever in New Orleans. The Board's statistician kept me informed through his clipping bureau system of what was going on throughout the South, and the stenographer kept me advised of the principal events transpiring in the office, so that I was in close and daily touch with the situation.

On the 5th, learning that the Missouri State Board of Health had inaugurated a quarantine on its state line running from St. Louis south to its southern border, thence along its southern border to its west border, thence north along its west border to Kansas City, Mo., which included the east border line of the state of Kansas, I immediately telegraphed the secretary of the Missouri Board, asking for a conference, that I might be advised of why the east line of Kansas had been included in the quarantine. Accordingly, on August 7th, we met by agreement at the Blossom House, in Kansas City. After talking over the situation, I suggested that the representatives of the railways running south into the infected districts be called to meet with us, which was agreed to by Doctor Adcock, the secretary of the Missouri Board. Representatives of the Kansas City Southern railroad, Frisco system, the Missouri, Kansas & Texas railroad and the Missouri Pacific railroad met with us in the parlors of the Blossom House, and after a conference in which the situation was thoroughly canvassed, both as to the interests of the people and the railroads, the following regulations were adopted, with a promise on the part of the railroads to faithfully carry out its provisions:

"*First*, That quarantine be established against all districts infected by yellow fever, and that all railroads, steamboats and other public conveyances be required to demand of all passengers a certificate of health before entering upon the different lines into the states of Missouri and Kansas from any infected districts where yellow fever exists, and no railroads, steamboats or other public conveyances shall accept any passengers from such district beyond the borders of the states of Missouri and Kansas, without these requirements being first demanded and exacted by such transportation company.

"*Second*, That any railroad train, steamboat or other public conveyance entering the states of Missouri and Kansas from infected districts, or having on board any person or persons sick of yellow fever, or with symptoms indicating same, or without a proper health certificate, if such passenger is from an infected district, said train, steamboat or other public conveyance and all passengers in transit thereon shall be detained at a point of detention for five days or until all danger of infection is removed."

In order that we might be advised that the provisions were carried out, all bulletins and instructions and information issued by these companies concerning the yellow-fever quarantine were sent in copy to this office.

Upon returning to Topeka the following letter was transmitted to the Rock Island and Santa Fe roads:

"TOPEKA, August 7, 1905.

"DEAR SIR—I have just returned from Kansas City, where a conference with the Missouri State Board of Health was held, and where the following proposition was agreed to by the executive officers of both boards, relative to the epidemic of yellow fever which is now prevalent in Louisiana. (Regulations as above.)

"At this conference were representatives of the Frisco, Missouri Pacific, Kansas City Southern and the M. K. & T. railways. The representatives of these railways were in hearty accord with the above modified quarantine regulations, and promised their hearty cooperation in all measures to prevent the spread of the disease.

"The Rock Island and Santa Fe systems not entering the infected districts, and being distinctly Kansas roads, were not invited to the conference, but it was suggested that these two latter companies be apprised of the regulations as agreed upon.

"Kindly give such instructions to superintendents of southern lines as may put into effect the above regulations; also furnish this office with copies of such bulletins or instructions as may be issued, that we may be fully advised of the steps taken in the matter. Very truly yours,

S. J. CRUMBINE, M. D., *Secretary.*"

A response from the Rock Island road indicated an agreement to comply with the request, but a letter from the general manager of the Santa Fe refused to do so. Following is the letter:

"AUGUST 10, 1905.

"*Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:*

"DEAR SIR—I am in receipt of your letter of the 7th inst., relative to the action taken at conference of the State Board of Health of Kansas and Missouri, held at Kansas City a few days since.

"Relative to your suggestion regarding certificate plan for passengers coming from the South, I beg to advise, as you are probably aware, we have no line into Louisiana, and any passengers from that district reaching our line would have to come through the states of Texas or Arkansas, directly or indirectly, both of which have very rigid quarantine regulations, and I think you will agree with me that it is practically impossible for anyone from any of the infected districts to pass through any of the states bordering on Louisiana without having undergone a rigid examination. It therefore seems to me to be entirely unnecessary and really unwise to adopt any such plan as you mention, so far as the lines of this railway company are concerned. Yours truly, J. E. HURLEY, *General Manager.*"

On September 1 the following was received from the secretary of the Territorial Board of Health of Oklahoma:

"*To all Agents:* You are hereby notified by the Territorial Board of Health not to sell tickets or carry passengers without health certificates from proper officers, from any points in Texas, Arkansas, Louisiana or Indian Territory to any points in this territory until further notification, and it has been deemed safe by the Territorial Board of Health.

"QUARANTINE PROCLAMATION.

"WHEREAS, It is a matter of general knowledge that the yellow fever is prevalent in certain sections of the South, notedly in the city of New Orleans, in the state of Louisiana, and liable to be carried and transmitted by persons coming from said infected districts; and

"WHEREAS, There is reasonable ground to apprehend danger from such sources, and it appears that persons from said districts might pass through the territory of Oklahoma, coming from the states of Louisiana, Texas, and Arkansas, that adequate steps should be taken to guard against such danger;

"NOW, THEREFORE, The Territorial Board of Health of the territory of Oklahoma do hereby declare and proclaim a quarantine against all persons from the states of Louisiana, Texas, Arkansas and Indian Territory coming into the territory of Oklahoma, except such persons who shall present to the health or other designated officers of this territory certificate from the county or health officer of the place from whence they came, showing under seal of said authorities the following facts, relating to the identical persons presenting said certificates, to wit: Name of person, age, height, weight, color, nationality, blonde or brunette, and that they are free from any infectious or contagious disease, and have not been exposed to the same for a period of ten days preceding the issuance of said certificate. Seal or affidavit of service must be attached to each certificate. All persons without these credentials from said districts will be refused admittance to the territory of Oklahoma, and all law officers of the territory of Oklahoma are hereby called upon to aid the local and territorial health officers in enforcing this quarantine.

"Done at Guthrie, Okla., this 25th day of August, A. D. 1905.

DR. B. F. HAMILTON, Shawnee, Okla., *President*,
DR. E. C. SHARP, Guthrie, Okla., *Vice-president*,
DR. J. W. BAKER, Enid, Okla., *Secretary*,
Of Territorial Board of Health."

This was accompanied by a request for information of the quarantine regulations of this state, to which was replied that we had no quarantine except against the infected district of Louisiana. Your secretary would suggest that the Board take up the yellow-fever subject at this meeting, indicating the Board's desires and wishes concerning quarantine. It would seem to your executive officer that sufficient quarantine had been established in the combined resolutions adopted by the Missouri and Kansas State Boards of Health. Owing to the stringent quarantine by the various states south of us, and also to the additional fact that the *Stegomyia callopsus* is not indigenous to the climate of this state, there can be little if any danger of a yellow-fever epidemic in Kansas.

A number of communications have been received from the secretaries of the various state boards of health through the West concerning the matter of railway-car sanitation. It has been suggested in this correspondence that the boards west of the Mississippi, through which states the great trunk lines of the West pass, should organize themselves either by a meeting or through correspondence for the purpose of formulating uniform rules and regulations for railway-car sanitation, and to form a uniform bill, to be introduced into the legislatures of all the states at the same time, compelling transportation companies to put into operation certain regulations and badly-needed reforms. I would suggest and recommend, therefore, that the Board instruct the secretary as to its attitude in this matter.

Since our last quarterly meeting, the secretary has had printed, in accordance with the rules and regulations which heretofore have been dead letters, because of their not having been put in force, blank applications for disinterment permits, together with the regular permit. He has also notified the embalmers' examining committee that hereafter all applications for disinterment must come through this office and such permission granted by the State Board of Health. These rules require that certain permits can only be granted by the Board when in actual session, where death was caused by diphtheria, etc. Two such applications have been received for the disinterment of bodies, one where death was caused by diphtheria, and one by membranous croup, for which the Board's permission is asked for disinterment.

On January 10 permission was granted by this Board for the removal of the bodies of soldiers buried at Fort Hays military reservation for reinterment at Fort Leavenworth. This permission was granted upon the following conditions: First, that the permission of the local board of health of Ellis county be obtained; and, second, that all disinterred remains should be immediately enclosed in an air-tight (soldered) zinc, tin or copper-lined coffin, or box, at the burying-ground, before being received by the transportation company for shipment. Permission of the local board of health was obtained, and the war department notified. They accepted these conditions and advertised for bids for the disinterment and removal of these bodies. Another county health officer is in charge since the local board's permission was granted, and he insists on additional requirements, that of a rigid quarantine of the men while engaged in disinterment, and the burning of all clothing, tents and wearing apparel of those engaged in disinterment, before they are permitted to leave the quarantine camp. These additional requirements were objected to by the government, which objection was finally waived, and the original agreement carried out in full.

The general health of the state during the past quarter has been excellent. Contagious diseases are at a minimum. Reports from county health officers have been fairly prompt, and the sanitary organization of the state seems to be more complete than it ever has been, although there is a great deal of room for further improvement.

Since the system of check in the transportation of the dead has been inaugurated, a large number of cases of violation of the rules of the Board have been uncovered, both by railroads and by undertakers. These cases have been vigorously investigated by your secretary and Mr. Kean, and much good has resulted therefrom, in the past few months there being but two violations of the rules.

Minutes of the Second Quarterly Meeting.

The second quarterly meeting of the State Board of Health was held in the office of the secretary Thursday, December 21. The meeting was called to order at 1:30 P. M. by the president, with the following members present: Doctors Golden, Locke, Mills, Carver, Carlile, Bentley and Lerrigo, and Mr. Welch. Doctors Alexander and Scott were absent. Of the advisory board, Doctor Greenfield and Professor Bailey were present.

The minutes of the last meeting were then read by the secretary, and were approved and placed on file.

The report of the secretary was then read, and upon motion was ordered placed on file.

The application to disinter the body of W. M. Thorp, who died at Emporia, in 1885, of diphtheria, and remove to Marion, Kan., was granted, and the disinterment permit issued.

The application of Mr. and Mrs. Goodwin to disinter the body of Callie Goodwin, who died of diphtheria August 28, 1905, was withheld, on the ground that disinterment was too soon after death.

Upon motion, rule 31 of the rules of the State Board of Health was changed to read as follows:

RULE 31. The following regulations respecting the transportation of dead bodies for burial beyond the county where the death occurred will be observed: No body which has died of any infectious or contagious disease

shall be received for transportation by any transportation company in this state unless it shall have been embalmed by a person holding an embalmer's certificate, properly signed by the president and secretary of the State Board of Health. Every license-holder shall enter the number of his embalmer's certificate upon every permit which he fills out. In all such cases the said Board of Health shall require coupons attached to such permit, to be detached and preserved by every common carrier, or the person in charge of any vessel, railway-train or vehicle to which dead bodies shall be delivered for transportation. No permit shall be issued for the transportation of bodies which have died of any infectious or contagious disease, except in accordance with the foregoing rule. Any violation of these rules shall subject the offender to a fine of ten dollars for each offense.

Upon motion by Mr. Welch, the word "person" was substituted for "funeral director, undertaker or embalmer" in the first line of rule 7 of the rules of the Board governing the embalmers' examining committee.

The report of the secretary of the embalmers' examining committee was then read, which is as follows:

OLATHE, KAN., December 18, 1905.

S. J. Crumbine, M. D., Secretary State Board of Health, Topeka, Kan.:

DEAR SIR—Our committee not having had a meeting since my last report, I have nothing to report of business transacted, but I would respectfully recommend the following changes, viz.:

Rule 31, for transportation of corpses, to read "the holder of an embalmer's certificate" in lieu of "embalmed by an undertaker holding an embalmer's certificate."

Rule 7, article (*c*), for preparing the dead. I would suggest that it be changed to read "ten dollars" instead of "five dollars," as the latter sum is inadequate to defray the expenses of these meetings, as the numbers to be examined decrease. Above change to take effect after July 1, 1906.

Rule 16, changed so as to read "five dollars per day" whereas it now reads "three."

Rule 17, changed so as to read, "the secretary shall furnish a bond in the sum of $500 in some good bonding company; said bond shall be approved by the president of the State Board of Health and paid for out of the funds of the committee."

I trust you will think well of these changes and see fit to adopt them or similar ones. Very respectfully yours,

T. J. KEAN, *Secretary.*

Upon motion by Doctor Mills, the suggestions as contained in the secretary's report were adopted as read. The changed rules therefore read as follows:

RULE 7. It shall be the duty of every person who may wish to qualify as competent to prepare the remains of one who has died of an infectious or contagious disease, for transportation, to comply with the following requirements: (*a*) He or she shall be at least twenty-one years of age, and be actually engaged in the embalmer's business as an employee or proprietor. (*b*) He or she shall make application to the embalmers' examining committee for a certificate; such application shall contain his or her full name, age, place of residence, and the certificate of two legal physicians of good repute as to his or her general standing. (*c*) The application shall be accompanied by a fee of ten dollars, which shall entitle the applicant to examination as to his or her fitness for such special work, and the issuing to him or her of a certificate stating that he or she has satisfactorily passed an examination. (*d*) He or she must be able to pass such an examination as shall be prescribed by the embalmers' examining committee in the visceral anatomy of the body; the action and comparative value of germicides; the methods of embalming; the further precautions after embalming to insure safety in the transportation of bodies of those who have died of an infectious or contagious disease; the meaning of infection and disinfection; and such other topics as said committee may from time to time see fit to name.

RULE 16. The traveling and incidental expenses, hotel bills, etc., of the examining committee shall be paid out of funds in the possession of the treasurer of the committee. Each member of the committee shall be allowed five dollars per day for every day actually spent in the work of the committee; provided, that this per diem shall not be allowed for more than four days at any one examination.

RULE 17. The secretary of the embalmers' examining committee shall be allowed a salary of $100 per year, and he shall keep a record, in which shall be registered the names and residences of all persons to whom certificates (as prescribed) have been granted, and the number and date of these certificates. A copy of this record shall be furnished to all those holding certificates, and also to the various transportation companies within the state. The secretary shall furnish a bond in the sum of $500 in some good bonding company; said bond shall be approved by the president of the State Board of Health and paid for out of the funds of the committee.

Rule 9 of the rules for the transportation of dead as recommended by the secretary of the Board in his report was, upon motion, adopted, which rule reads as follows:

RULE 9. For interstate transportation of the dead only embalmers holding license issued or approved by the state or provincial boards of health or other state or provincial authority provided for by law under examination shall be recognized as competent to prepare bodies for shipment.

Doctor Greenfield then gave her report, which is as follows: "Since July 1, 336 examinations. For tuberculosis, 130, with 35 positive. For diphtheria, 175, with 94 positive. Number of water tests, 24.

Professor Bailey, the Board's chemist, then made his report of the result of analyses of food products sent him by the secretary. Doctor Mills moved that the report be placed on file and admitted to the public gaze.

The report of the special committee appointed to frame a bill for state sanatorium for tuberculosis was then submitted by the chairman, Doctor Lerrigo. Upon motion the committee was continued, to report at a subsequent meeting, after having a conference with the Board's attorney concerning the constitutionality of the bill. The subject-matter of the bill received the approval of the Board.

Owing to the lack of funds for holding two more meetings in this fiscal year, it was voted that the March meeting of the State Board of Health be omitted.

After an informal discussion of other subjects, upon motion the Board adjourned.

The following bills were audited and allowed:

J. B. Carlile	$25 35
E. P. Mills	9 20
G. E. Locke	10 01
J. B. Carver	23 00
C. H. Lerrigo	5 00
H. M. Bentley	22 50
L. A. Golden	32 30
C. D. Welch	22 00
Total	$151 36
E. H. S. Bailey	2 25
Total	$153 61

SECRETARY'S QUARTERLY REPORT.

Since our last quarterly meeting, held September 14, there has been very little beside the routine work of the office that would necessitate special mention to the Board, excepting, perhaps, that diphtheria has prevailed during the months of October and November to a greater extent and was more widely spread throughout the state than has occurred in several years. It is gratifying to note, however, that the number of fatalities in proportion to the cases reported is a great deal less than could have been expected several years ago, before the advent of antitoxin, and before the services of the state laboratory were free to the physicians of the state for the purpose of diagnosis. The work of the laboratory during the past few months has at times been quite heavy, and we are in receipt of acknowldgements of appreciation by a number of physicians that such provision has been made for the free examination of specimens sent for diagnostic purposes. Certainly the wisdom of the last legislature in making such provision has been amply demonstrated already, and we can but hope that the next legislature will enlarge the scope and usefulness of this portion of the Board's work.

At the time of the last meeting correspondence concerning the disinterment of soldiers buried at Fort Hays was not in my possession, having forwarded the letter from the War Department to Doctor Middlekauff, county health officer of Ellis county, that he might be advised of the attitude of the government concerning his additional requirements after the State Board or Health had granted permission to the government to disinter the bodies.

In order that this correspondence may be laid before the Board in full, I herewith submit the letter from the War Department, dated August 31:

"*Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:*

"SIR—Referring to your letter of January 10, 1905, addressed to Maj. M. Gray Zalinski, quartermaster, United States army, Omaha, Neb., enclosing a certified copy of permit from George B. Snyder, M. D., then county health officer of Ellis county, Kansas, for the removal of the remains of United States soldiers buried in the old Fort Hays military reservation, and to the statement in your letter that the permit for removing these remains was conditioned upon the strict observance of the rule that 'Each disinterred remains shall be enclosed in a hermetically sealed (soldered) zinc, tin or copper-lined coffin or box, immediately after disinterment and before offering such remains to the transportation companies for shipment.'

"This office was very much pleased to receive your letter, above mentioned, and, in pursuance of the authority contained therein, bids were invited for the removal of the remains and duly received by the chief quartermaster, Department of the Missouri, Omaha, Neb., who submitted them to this office for instructions as to award of contract. While the subject was under consideration by this office the chief quartermaster, at Omaha, received your communication dated June 20, 1905, enclosing a letter received by you from Doctor Middlekauff, the then county health officer of Ellis county, Kansas, in which he advised having imposed additional requirements upon the Department in connection with the removal of these remains, to wit: 'That all persons engaged in disinterring these remains shall be placed under quarantine at the cemetery; all clothing, tents, etc., used shall be burned; and all workmen disinfected under the direction of the county health officer.'

"While this department did not consider that the additional requirements imposed by Doctor Middlekauff were at all necessary, in view of the great length of time that had elapsed—upwards of forty years—since the remains were buried, and the extreme unlikelihood that anything but dust or petrified remains would be found in the graves, yet, in order to carry out as far as practicable the desires of the county health officer in this matter, instructions were given for the preparation of new specifications to include the above additional restrictions and for the inviting of new proposals for the work. The bids which have just been received in this office in response to said readvertisements show an excess of more than $900 over those previously submitted for this work without the requirements imposed by the county health officer as above indicated.

"I have the honor to request, therefore, by direction of the quartermaster-general, that you will kindly inform this office whether the county health officer of Ellis county, Kansas, has the legal right to surround the work of removing these remains with requirements which, for the reasons above stated, are both unreasonable and unjust to the Department and impose unnecessary hardship and inconvenience upon those who may be engaged upon the work, as well as involving an increased expenditure by the government of between $900 and $1000.

"There is no danger whatsoever from contagion connected with the removal of these remains, they having been buried such a great length of time, Even in the Philippine Islands, where maintains the severest sanitary regulations for the minimizing of the danger of contagion from this, in that region, endemical disease, the disinterment of the bodies of persons who have died of cholera is permitted after two years from date of burial. If a limit of two years be considered by experts on the sanitation necessary to prevent the spread of contagious diseases in a country like the Philippines, it certainly seems absurd, and, in fact, I may say, a reflection upon the intelligence of the community and the health officer making the requirement, to surround the removal of these remains, which will probably be now a mere handful of dust or a few dry bones, with such restrictions as Doctor Middlekauff has done.

"It is therefore requested that your Board, or whoever has the authority under the laws of the state to do so, direct Doctor Middlekauff to remove the onerous and unnecessary restrictions which he has interposed in this matter, and in order to carry out which would cause the unnecessary expenditure of from $900 to $1000, and direct him to work in accord with the representatives of the general government in this matter, expediting and asisting them so far as lies in his power to do so, rather than hindering and impeding them.

"It is requested that you take early and prompt action in this matter, which will be duly appreciated by this Department.

Respectfully, J. B. Billings,
Major and Quartermaster, U. S. A."

This letter was transmitted to Doctor Middlekauff, with the following letter from the secretary:

"Topeka, September 5, 1905.

"*J. H. Middlekauff, M. D., Hays City, Kan.:*

"Dear Doctor—I herewith enclose a letter from the War Department, which explains itself. The facts of the matter as they appear to me are these: That while Doctor Snyder was yet county health officer application was made to this department for the removal of these remains, and upon the showing that the government made concerning the absolute absence of danger in removing these cholera soldiers, citing as an instance that the remains were removed after two years from the Philippines and brought to this country for reinterment, this department granted permission upon the approval of the county board of health of your county. The matter was therefore checked up to your county and permission granted, the only restriction or provision made being that which the Department quotes in this letter.

"Now, it would seem, Doctor, to impose any additional restrictions since permission was granted by this Board and by your county board of health, would be rather unfair, and from the tone of this letter, the War Department is not inclined to stand much. My judgment is that you should permit the matter to proceed according to the original design and agreement. Understand me, Doctor, I am not insisting that you do this, because it is up to you to go back on your former county health officer's agreement if you think the public welfare demands it. So far as I am personally concerned, I am perfectly satisfied that there can be no danger at all in the removal of these remains, and that any fears on the part of your citizens are groundless.

"Please return this letter, with your reply, by return mail, if possible, that I may frame my answer to the Department.

Very truly yours, S. J. Crumbine, *Secretary.*"

On September 16 Doctor Middlekauff returned the correspondence, with the following letter:

"Hays City, September 14, 1905.

"*S. J. Crumbine, M. D., Topeka, Kan.:*

"Dear Doctor—I am in a dilemma in what manner I should answer the enclosed letters of the War Department and yours. There may no trouble result, but I know if the workmen while disinterring the remains should board and sleep in Hays, there would be trouble in the shape of an injunction. I do n't want to appear obstinate. I thought I was only using a good caution. I consider 'prevention better than cure.' If the Board of Health suggest that the government be allowed to go ahead and remove the remains without quarantine, etc., why, write me, and I will withdraw my original restrictions and conform to yours. Yours,
J. H. Middlekauff."

To this I replied as follows:

"Topeka, September 16, 1905.

"*J. H. Middlekauff, M. D., Hays City, Kan.:*

"Dear Doctor—I have your letter of the 14th, and in reply will say that inasmuch as permission was granted by this Board and the Ellis county board of health, under certain restrictions, and the government has asserted its willingness to comply with these restrictions, I think best that the matter should proceed according to such agreement.

"In your letter to the War Department I would suggest that you advise the government that those who disinter the remains should be required to camp outside the city while the work progresses, in order that public opinion may be satisfied. If a camp is established there is no necessity of quarantine, and there would be no danger so far as your citizens are concerned. Please address your communication to me, and I will in turn forward it as my reply to the Department's letter of August 31.

Very truly yours, S. J. CRUMBINE, *Secretary.*"

On December 5 the regular yellow disinterment permit was granted to the government for the disinterment of soldiers at Fort Hays, the contract having been let to an undertaker of Leavenworth.

On October 20 was held the general conference of embalmers' examining committees with state boards of health at Niagara Falls. It was requested that a delegate be sent from the Board of Health as well as the examining committee. This Board having no means for sending a representative, Mr. Kean was selected to represent the committee, the expenses being paid from their fund for that purpose.

In correspondence with Doctor Adcock, secretary of the State Board of Health of Missouri, concerning the yellow-fever quarantine maintained by our two respective states, it was agreed that on October 7 the quarantine should be raised so far as these states were concerned, as the epidemic had well-nigh run its course, and the average date of the first killing frost being that of October 15, there could be no apprehension of its spread to Missouri and Kansas by reason of raising the quarantine. The following notice was then sent out to all transportation lines:

"*To Whom it May Concern:* It appearing from the reports of the United States Marine Hospital Service that the epidemic of yellow fever in the South is well under control; and it further appearing that the quarantine measures of the states immediately south of this state are, and have been, effective in preventing the spread of the disease northward; and furthermore, it being so near to the time of the average date of the first killing frost in Kansas, namely, October 15;

"Therefore, it is ordered that all quarantine measures against the yellow-fever-infected districts of the South by the state of Kansas are hereby raised, the same to take effect October 7.

"By order of the State Board of Health.

S. J. CRUMBINE, *Secretary.*"

For several months there had been a contention between the county health officer of Shawnee county and the city health officer of Topeka, concerning whose duty it was to have charge of the sanitary condition of the five-mile strip surrounding the city of Topeka. This strip had originally been set aside by the city of Topeka by ordinance, for the purpose of preventing the introduction of contagious diseases into the city, and the city therefore had sanitary control of such strip. By agreement between the county health officer and the city health officer, the decision as to whose duty it was to have control of such strip was left with the secretary of the State Board of Health, and upon a thorough examination of the question, it was found that the ordinance setting aside this strip for sanitary purposes had been repealed in April, and that the city of Topeka no longer had jurisdiction outside of its own limits. Notice was therefore given to the parties concerned that it was the duty of the county health officer to have sole charge of the disputed territory.

On November 7, 1905, the following report was received from J. T. Willard, chemist at the Agricultural College:

"We find no evidence of renovation in the Primrose butter. The analysis is as follows: Fat, 74.8; water, 18.6; salt, 4.7; casein, ash, etc., 1.9. It is free from boric acid, formaldehyd and borax.

"The sample marked 'Condensed Cream, Carnation Brand,' gave the following results: Total solids, 27.2; fat, 8.3; ash, 1.6. Number of times condensed, 2.3. Fat in original milk, 3.7 per cent. Formaldehyd, sodium carbonate, boric acid and borax absent. Yours truly,

J. T. WILLARD."

The standard of purity as laid down by the United States Department of Agriculture in their bulletin dated December 20, 1904, is as follows:

"Cream: Cream is that portion of milk, rich in butter-fat, which rises to the surface of milk on standing, or is separated from it by centrifugal force, and contains not less than eighteen per cent. of milk-fat. Evaporated cream is cream from which a considerable portion of water has been evaporated."

"Butter: Butter is the product made by gathering in any manner the fat of fresh or ripened milk or cream into a mass, which also contains a small portion of the other milk constituents, with or without salt, and contains not less than 82.5 per cent. of butter-fat."

By acts of Congress approved August 2, 1886, and May 9, 1902, butter may also contain additional coloring matter.

"Renovated or process butter is the product made by melting butter and reworking, without the addition or use of chemicals or any substances except cream, or salt, and contains not more than sixteen per cent. of water and at least 82.5 per cent of butter-fat."

It would seem from the above analyses as compared with the standards set up by the United States Agricultural Department, that the butter analyzed was deficient in butter-fat, as was also the cream.

The results of the analyses referred to Professor Bailey will be reported to the Board direct by himself.

On November 8 a letter was received from Dr. C. O. Cranston, of Moline, stating that there were a large number of cases of diphtheria in that city, and that nothing had been done in the matter of quarantine, and that there had been four deaths. A request was made that this Board use its influence toward establishing an effective quarantine. Instructions were sent with the request that the city officials' attention be called to the requirements of the law, and if any further trouble was encountered to report same, when the secretary would make a visit to Moline, if in his judgment it was thought necessary.

On November 11 the following telegram was received: "MOLINE, KAN., *Dr. S. J. Crumbine, Topeka, Kan.:* Think you had better come down and take charge here. C. O. CRANSTON." Whereupon I proceeded to Moline, telegraphing the doctor to arrange for a meeting with all the physicians of the city and the city officials. Upon arriving we proceeded to the city hall, where a meeting was held. It was discovered that there was a conflict of opinion between the physicians as to the nature of the disease. Inasmuch as the disease was epidemic, there being approximately fifty cases, and children attending schools, and inasmuch as there had been four deaths, the secretary felt warranted in ordering the city board of health to inaugurate and maintain a strict quarantine, and that the city marshal be instructed to arrest any person violating the same. It was agreed by the board of education that the schoolhouses be thoroughly fumigated before being opened, and that no one suffering from the disease should be released from quarantine until a test by the state bacteriologist should warrant such release. The cooperation of the city officials together with the physicians was promised.

The tests made by the bacteriologist of the swabbings brought by the secretary showed diphtheria present.

In the October report received from the Soldiers' Orphans' Home, at Atchison, complaint was made that the sewage from that institution was emptied on the ground adjacent to the institution, and that there was no means provided for its proper sanitary disposal. This same complaint had been made at other times, but the Board having no authority in the matter we were unable to give any relief in the situation. The attention of the Board of Control was called to the complaint, whereupon the following letter was received:

"TOPEKA, November 27, 1905.

"*Secretary State Board of Health, Topeka, Kan.:*

"DEAR SIR—Touching the subject of the sewerage system at the Soldiers' Orphans' Home, at Atchison, Kan., concerning which Supt. E. L. Hillis reported to your Board a short time since, the Board instructs me to advise you that that part of the superintendent's report stating that their sewers empty on top of the ground about 500 feet from the building is correct. That this condition needs remedying there is no doubt. The expense attached to properly correcting same would be not less than $2000. The last legislature appropriated $2000 for a sewerage plant at that institution, which appropriation was made available during the fiscal year ended June 30, 1905. Whether this was a clerical error, and it was intended that the appropriation should be available during the present fiscal year, we have no means of knowing. It may have been considered of enough importance that they desired to install the new plant within the time the appropriation was available, viz., March 8 to June 30. We are informed that the state architect had the plans ready and that a firm in Kansas City had figured on installing a good sewerage system, but why the same was allowed to lapse we do not know.

"There are, at the present time, more pupils in the institution, and will be throughout the year, than have been maintained during the prior years. The appropriation for care and maintenance has not been increased in accord with this increase in inmates. The Board will be obliged to also purchase a new engine and dynamo in order to furnish light and water to the institution, as the ones now in use are almost complete wrecks. This will have to be done out of the general appropriation for maintenance, and will cost between $1400 and $2000. This will render it impossible for the Board to draw further from this general maintenance fund during the present year for these general repairs, and, as above stated, as the present Board took charge of the institutions only July 1, we do not know why the appropriation was allowed to lapse. We assure you that at the first opportunity available the matter will be remedied and put into satisfactory condition.

"Trusting that this explanation will be satisfactory, and thanking you for calling the attention of our Board to the matter, we are,

Very truly yours, STATE BOARD OF CONTROL,
F. W. KNAPP, *Secretary.*"

On December 13 a letter was received from Dr. E. V. Wharton, city health officer of Yates Center, requesting that I go to his city to have a conference with the physicians and the city officials concerning the epidemic of diphtheria which had been prevalent in Yates Center for the past two months. Accordingly I went to Yates Center on Friday, the 15th.

Doctor Wharton had made arrangements for a meeting in the evening at the city hall, and, arriving in the afternoon, I had some time at my disposal, which the doctor insisted should be spent in a sanitary inspection of the city. This we did, the findings of which were made a part of the substance of my remarks at the evening meeting. From the evidence that I gathered it appeared that about a month previous to my visit diphtheria had broken out in the town, and, in the first instance, being unrecognized, resulted in a large number of exposures, the disease spreading rapidly until a large number of cases were taken down, resulting in several fatalities. Swabbings sent to the laboratory confirmed the suspicions of one of the physicians that they were indeed dealing with diphtheria.

The schools were immediately dismissed, at the suggestion of the city health officer, and a proclamation issued by the mayor forbidding children under the age of sixteen to appear on the street or in any public place, under penalty of arrest. This stringent and unusual measure was, in the main, observed by the people of Yates Center, but gradually became burdensome, the children finally refusing to be kept isolated any longer, whereupon several arrests were made, and, upon the cases coming to trial, were dismissed by the judge on the ground that they had no authority in law for making such a proclamation and causing arrests for its violation. Such a stringent measure resulted, as usual, in the disregard for other measures that had been put into motion by the city board of health, until there came to be a carelessness and disregard for the state's quarantine law. The schools were reopened, notwithstanding the continuance of the epidemic, and, coincident with the opening of the schools, a large number of new cases came down.

In the conference held with physicians and city officials they were advised to put into operation only such restrictive measures as the state quarantine law provided, but to see that the quarantine law was strictly observed in every case, without fear or favor. The city marshal was instructed by the mayor to cause the arrest or any person violating such law.

Upon inquiry it was discovered that the vicious practice of using common pencils among the school children was in vogue, and that common drinking-cups, which were never cleaned, was also the custom. The superintendent of the schools was thereupon ordered to burn all the pencils that were in use and to discontinue the practice, for the present time, of common drinking-cups. The schoolrooms in the city were ordered fumigated, effectively and thoroughly, together with all school-books, and to be prepared for fumigation in the manner laid down by the State Board of Health.

It had been claimed that the schoolrooms had been fumigated, but, in my judgment, after hearing the way and manner in which it was done, I would consider such fumigation inefficient. I advised that churches and other places of public assembly should be thoroughly and effectively fumigated, that all cases of sore throat should be held in detention until such time as swabbings sent to the bacteriologist would determine the diagnosis, and that all cases suffering from diphtheria, after diagnosis had been made by the bacteriologist, be continued in quarantine until the swabbings sent to the bacteriologist should indicate the absence of Klebs-Lœffler bacillus.

The city council and mayor gave hearty assent to this arrangement, and there can be no doubt but what if these instructions are faithfully carried out the epidemic will soon be abated. Among the fatalities in Yates

Center from diphtheria are recorded those of two adults—one a woman of seventy years of age—which is rather unusual.

The general sanitary condition of the city was then discussed and suggestions made in the framing of ordinances and prohibiting the discharge of sewage in the streets and gutters, the use of uncemented cesspools, and other matters of an unsanitary nature which were found to exist there.

This Board has no specific rule concerning the transportation of bodies outside the state except in so far as our general rules might apply to such bodies when dying from a contagious or infectious disease. A number of the state boards have passed a special rule concerning interstate transportation of bodies, and I therefore desire to present the following rule, which is similar to the one adopted by other states, such rule to take effect on and after January 1, 1906:

> "RULE 9. For interstate transportation of the dead only embalmers holding license issued or approved by the state or provincial boards of health or other state or provincial authority provided for by law under examination shall be recognized as competent to prepare bodies for shipment."

Application has been made by F. J. Funk, of Marion, for permission to disinter the body of W. M. Thorp, who died of diphtheria December 20, 1885, reinterment to take place in Marion. Permission to disinter bodies that have died of diphtheria must be granted by the Board while in session. Permission is therefore asked.

I desire to call the Board's attention to a situation which, in my judgment, should find amendment in the examining committee's rules. Rule 7 of that committee provides that certificates shall only be issued to undertakers actually engaged in the business of undertaking. There are a number of counties in western Kansas in which there are no undertakers engaged exclusively in the undertaking business. Those who sell caskets are generally engaged in either the hardware or furniture business, and know little or nothing about embalming. It happens, therefore, when bodies are presented for shipment, they have to be embalmed by one of the local physicians. This, of course, is contrary to the rules, and the body must either be refused by the transportation companies or our rules violated. In quite a number of instances where the rules have been violated by the transportation companies, investigation revealed the fact that local conditions were such that it was impossible to get a licensed embalmer, in some instances, within 100 miles, which would make it expensive to those needing such services, and delaying the transportation of the body. I would recommend that in such counties where there are no undertakers engaged exclusively in the undertaking business, that physicians be permitted to take the examination before the committee and receive a license in the event of their passing a satisfactory examination.

On the morning of December 19 the following telegram was received: "DEXTER, KAN. *To the State Board of Health, Topeka:* Shall we refuse admittance to school of children from house where death from membranous croup occurred Saturday? Local health officer says membranous croup not contagious and tells children to attend. B. J. SILLIMAN."

To this the following reply was sent: "*B. J. Silliman, Dexter, Kan.:* Membranous croup subject to same quarantine regulations as diphtheria.

Fumigate house and hold in detention for ten days, after which, if no other cases come down, raise quarantine. S. J. CRUMBINE."

The same morning the following telegram was received: "EL DORADO, KAN. *S. J. Crumbine, Topeka:* Some dispute in regard to smallpox at Douglas. Will you come down? Will go from El Dorado with you and settle question. Answer. F. E. DILLENBECK, *Health Officer.*"

Also a telephone message from Douglas was received, requesting myself or a member of the Board to go to that place and settle dispute, whereupon a telegram was sent to Dr. J. B. Carlile, member of the Board from Leon, asking him if he could go to Douglas to represent the Board in the matter.

Application is made by Mr. and Mrs. Goodwin for the removal of the body of their daughter, Callie Goodwin, who died of diphtheria on August 28, 1905, from Rochester cemetery to the city cemetery in Topeka, by private conveyance. I desire to call the Board's attention to the length of time this body has been buried, that the matter may be weighed as to whether or not it may be disinterred at this time. On the other hand it must be remembered that it is not to be offered to the transportation companies, but will be conveyed by private conveyance. It would seem that if the rough box is not opened there might be no danger in granting permission to disinter at this time.

Minutes Annual Meeting, 1906.

The State Board of Health met in annual session in the office of the secretary, at the state-house, at 10:30 A. M., June 21. The president and vice-president not having arrived, Dr. E. P. Mills was elected president *pro tem.* The order of business was then taken up and the minutes of the last meeting, that of December 21, 1905, were read, and upon motion ordered placed on file.

An application for disinterment of a body that had died of smallpox, also an application for reinterment in Brown county of a body that had died of yellow fever and was at the present time buried in Louisiana, were presented. The rules and regulations of the State Board of Health being such as to prohibit the granting of these requests, upon motion the attorney of the Board, Mr. C. D. Welch, was ordered to submit a revised rule which might permit of a greater latitude concerning the granting of permission to disinter and the transportation of the hitherto prohibited diseases.

A general discussion took place of matters of interest to the Board until the noon hour, when adjournment was taken until two o'clock.

The Board reconvened at two o'clock in the second session with all the members present.

The report of the secretary of the embalmers' examining committee was then presented, which reads as follows:

OLATHE, June 9, 1906.

To the Officers and Members of the State Board of Health:

GENTLEMEN—I, as secretary of the Kansas embalmers' examining committee, report that we have held one examination during the present year:

Number examined	23
Number reexamined	3
Number licenses granted on certificates of other states	1
	27
Number failed	6
Number paid fees	24

Have received as follows:

Balance on hand September 9, 1905	$29 15
January 16, 24 paid fees, $5 each	120 00
Renewals to date	49 00
Total paid to Treasurer Maltby	$198 15

Everything is moving along pretty well. We have had quite a number of violations of our rules, but have gotten things fixed up after the exchange of a few letters with each violator, all of which we are constrained to the belief will result in good.

We would recommend the adoption of a standard disinfectant. Nearly every one who is examined has something to say about an approved disinfectant, and he does not know the ingredients of the patent formula that he uses. The National Fluid Committee have a formula that will be made public at a meeting of the National Funeral Directors' Association in September, but their formula can be obtained before that time, and we would recommend the adoption of their formula in order that all states have the same (a uniform formula), there being a feeling in several states against a mineral fluid, which they cannot legally use.

We would further recommend the dispensing with the wording of "wrapping in cotton" in our rules, as being impracticable and useless, and is seldom done in any of the states.

There has been some criticism of the examining committee for calling a meeting for examinations the day before the meeting of the convention at Wichita as conflicting with the rules.

We would therefore recommend the changing of the wording of this rule, so as not to imply an ambiguous meaning; as there can be no possible objection to an examination before a school of instruction, especially as it allows the examined the benefits of reduced railroad rates, and to get the benefits of the convention on same trip.

Respectfully submitted, T. J. KEAN.

The recommendations therein contained were then taken up. The first, concerning the adoption of a standard disinfectant, was deferred until the September meeting. The second recommendation, in which it was recommended that the requirement that bodies should be enveloped in a layer of cotton not less than one inch thick, as contained in rules 2, 3 and 4, be stricken out, upon motion was so ordered, and that portion of the requirements stricken out.

The third recommendation, concerning the time of the July meeting of the embalmers' examining committee, was changed by Doctor Mills offering a substituted rule, which reads as follows:

> The annual meeting of the embalmers' examining committee shall be held in June, prior to the meeting of the Funeral Directors' Association, and such other meetings at such other times and places as the committee shall deem necessary and the secretary of the State Board of Health approve.

The report of the treasurer of the embalmers' examining committee was then read and ordered placed on file. The report is as follows:

McPherson, June 16, 1906.

S: J. Crumbine, Topeka, Kan.:

Dear Sir—Enclosed please find report of treasurer:

Jan. 17, 1906.	Received from outgoing treasurer, L. M. Penwell		$442 29
Jan. 18, 1906.	Received from secretary, T. J. Kean		100 00
May 18, 1906.	" " " "		52 05
June 13, 1906.	" " " "		46 10
			$640 44
Paid out on warrant	No. 73, cash	$9 00	
" " " "	No. 74, "	10 00	
" " " "	No. 75, "	37 10	
" " " "	No. 76, "	9 60	
" " " "	No. 77, "	40 80	
" " " "	No. 78, "	48 30	
" " " "	No. 79, "	36 30	
" " " "	No. 80, "	64 40	
" " " "	No. 81, "	10 00	
" " " "	No. 82, "	36 60	
" " " "	No. 83, "	1 50	
" " " "	No. 84, "	7 50	
" " " "	No. 85, "	5 00	
" " " "	No. 86, "	10 00	
" " " "	No. 87, "	12 00	
" " " "	No. 88, "	22 05	
" " " "	No. 89, "	123 75	
Total			$483 90
Balance cash on hand			$156 54

Respectfully submitted, D. R. Maltby.

The secretary then read his report covering the period from the last meeting, December 21, to the present time, and upon motion it was ordered placed on file.

The recommendations contained in the report were taken up, and a motion carried that the secretary be instructed to undertake the gathering of a census of cases of tuberculosis in Kansas.

Upon motion, the following resolution was adopted: "That the secretary be empowered to employ such additional help as might be needed in this campaign, not to exceed ten dollars, and a sufficient fund to enable the sending out of stamped and addressed envelopes for reply."

Doctor Mills then made the following statement and motion: "In view of the fact that the rules of the Board were adopted years ago, and many of the things that are therein provided are now enacted into law, and other things are out of date, I move that a committee of two of this Board, together with the secretary and attorney, be appointed by the chair to revise the rules of the State Board of Health." The motion was carried, whereupon the president appointed the following committee on revision of rules: Dr. E. P. Mills, Dr. H. M. Bentley, Mr. C. D. Welch, and Dr. S. J. Crumbine.

Upon motion, the action of the secretary in relation to the plan adopted for the betterment of car sanitation, including rules submitted for such purpose, was approved.

Upon motion, the rules, as presented by the secretary, for the regulation of the manufacture and sale of foods and drinks, were adopted.

The recommendation that the Board take some action in the matter of the three delinquent county health officers who failed to make their annual report was then taken up, and, upon motion, the secretary and the Board's attorney were instructed to meet with the boards of county commissioners of Butler and Anderson counties, and to endeavor to have them take such action as, in their judgment, would seem wise and proper. The attorney was instructed to write to the board of county commissioners of Rooks county in the case of the third delinquent.

Mr. Welch then presented a substitute for rule 1, which is as follows:

> RULE 1. The transportation of bodies dead of smallpox, Asiatic cholera, yellow fever, typhus fever or bubonic plague is prohibited; provided, that after said bodies have been interred for two years, they may be transported under a special permit granted by the State Board of Health.

Whereupon the request for disinterment of the smallpox case in Johnson county for reinterment in Wyandotte county, to be conveyed by private conveyance, was allowed, subject to the requirements of rule 8.

Upon motion the secretary was instructed to inform the applicant for reinterment of yellow fever case in Brown county, that the Board's rules would not allow the transportation of bodies dying of this disease until after the lapse of two years from date of death.

Upon motion, a vote of thanks was extended to Prof. E. H. S. Bailey and Prof. J. T. Willard for the important part they have taken in the pure food problem by the analyses of food products sent to their departments. A general discussion followed on the aspect of the much-discussed pure food problem, and upon motion the secretary was ordered to send a telegram to the members of the Kansas delegation in Congress, requesting their vote and support of the pure food bill that was then before the House. The telegram was accordingly sent.

Doctor Greenfield then gave her report, which is as follows: "Examinations since the last meeting, 670: for tuberculosis 363, of which 116 were positive; for diphtheria 244, of which 122 were positive; for gonorrhea 10, of which 4 were positive; germs counted in fifty-three specimens of water."

The annual election of officers then took place, which resulted as follows: Dr. L. A. Golden, president; Dr. H. M. Bentley, vice-president. The advisory board was reelected.

The terms of two members of the examining committee having expired, the following were elected to serve for a period of two years: T. J. Kean, Olathe, reelected; J. A. Harouff, Atchison.

Doctor Lerrigo, chairman of the special committee on the bill for state sanatorium, made his report, and upon motion the committee was continued, with the addition of Mr. Welch, the Board's attorney.

Upon motion, adjournment was taken until ten o'clock the following day.

JUNE 22.

The State Board of Health met in annual conference with county and municipal health officers in room 6, fourth floor of the Statehouse, at ten A. M. Doctor Golden, president of the State Board of Health, presided.

Governor Hoch being out of the city, Mr. T. A. McNeal gave the address of welcome to the assembled doctors in his usual humorous and entertaining way. The program as announced was then given, and a pleasant and profitable session marks the third annual conference of the State Board of Health. It is regretted that not more of the county and municipal health officers were present, but it is fully recognized that many difficulties and obstacles are in the way of a complete attendance of such officers.

After the discussion of the pure food problem, a motion was made instructing the secretary of the State Board of Health to send a telegram to the Kansas delegation, urging the passage of the pure food bill then before the house. Accordingly the following telegram was sent:

> "The State Board of Health and county and municipal health officers now in session urge your vote and support to the pure food bill now before you. S. J. CRUMBINE, *Secretary.*"

A similar telegram was sent to the Honorable Mr. Heyburn, chairman of the committee having the bill in charge.

The question-box elicited a discussion along the practical duties of health officers, and should be a continued feature of the annual meetings.

The following bills were audited and allowed:

B. J. Alexander	$14 05
J. B. Carver	30 00
G. E. Locke	16 60
H. M. Bentley	24 00
E. P. Mills	22 10
C. H. Lerrigo	10 00
A. B. Scott	43 50
J. B. Carlile	37 85
L. A. Golden	37 32
C. D. Welch	31 00
Total	$266 42

SECRETARY'S REPORT.

To the Members of the State Board of Health:

GENTLEMEN—Since the last meeting of the Board, held on December 21, 1905, many events of importance, both to the Board historically and the public in general, have transpired, which will make this half-year a most memorable one.

The pure-food agitation which followed the publication of Professor Bailey's report in the January *Bulletin*, has been of very great value to the people of Kansas, and has no doubt restrained many manufacturers from the sale of injuriously-adulterated products in Kansas.

A number of letters have been received at this office finding fault with the attitude of the Board in its pure-food campaign; a very great many inquiries from manufacturers all over the United States as to our requirements, and, best of all, numerous commendatory letters from the great common people, commending the action of this Board, and requesting copies of the *Bulletin* containing analyses of food products. Your secretary has also had a number of personal conferences with manufacturers, and I am pleased to say that they have quite generally conceded the right of the

Board to interfere in cases of adulteration, and have expressed a willingness in the future to conform with the Board's requirements.

The past fall and winter has witnessed the most extensive epidemic of diphtheria probably in the history of this state. A number of the towns over the state were compelled to close their schools and other places of public assemblage. It is gratifying to note, however, that the rate of mortality was exceedingly light as compared to epidemics of former years. I believe this light mortality has been effected in two ways: First, the early use of antitoxin in known cases, and, second, the admirable work of the laboratory as a means of early diagnosis, so that antitoxin could be used, and cases isolated to prevent further infection of the well. This, together with the examination of a large number of specimens of suspected tuberculosis, and water analysis in suspected pollution, has been the means of the Board rendering invaluable service both to the physicians and the people in general throughout the state, and adds to the value of the work of the Board. The work done, however, simply emphasizes the need and necessity for a larger appropriation at the hands of the legislature, that the laboratory work may be enlarged and a complete equipment installed.

There has been a less number of other contagious diseases during the past year than during 1904, which, together with the mild type of the diseases, notably that of smallpox and scarlet fever, has made the past winter an unusually healthy one.

In looking over the vital statistics for 1905 one is again reminded of the perplexing problem which has confronted civilization from time immemorial, the solution of the problem of problems, the tuberculosis problem. Multiplying the reported 967 deaths from tuberculosis by 5, which is supposed to be the ratio of tuberculous cases in existence, we find we have at the present time in the state of Kansas about 5000 cases. The problem when presented in this way is appalling, and brings us face to face with the great necessity of this Board entering into hearty cooperation with the movement on foot in a few of the other states toward the prevention of this dread disease.

Two points in this connection I desire to recommend to the Board at this time, namely, the continuance of the Board's insistence on the establishment of a state sanatorium for the tuberculous poor, and that the secretary undertake the collection of a census of tuberculous cases in Kansas. I believe a census of this kind would be of great value, not only from a statistical standpoint, but in the definite location of each case, so that appropriate means and measures might be taken towards the proper cleansing and disinfection of all infected points. Moreover, with a painstaking investigation by the county health officer along this line many suspected cases might be brought to light, early diagnosis made, and the victim be given a chance for his life by appropriate treatment. The plan that I have to suggest is, that proper blanks be printed to be sent to county and municipal health officers at a certain date; that these blanks be furnished to each physician in the state, to be filled out with names and addresses, and other information, of every tuberculous case they have in care or in charge, or that they may know of that is not under the care of a physician; that suspected cases be reported, that the county health officer may take such steps as are necessary to make a diagnosis, using, of course, the laboratory for that purpose as well as physical signs; these reports to be forwarded to this office and tabulated, when such people will be furnished with literature along the lines of prevention. The details of the plan and of the composition of the literature have not yet been worked out. I trust this will meet with your approval.

In the January *Bulletin* was issued the first report of the analyses of food products, which *Bulletin* is submitted as a part of this report.

On January 8 the following letter was addressed to the attorney-general relative to the proper construction of the publicity law in the official publication of adulterated foods:

"TOPEKA, January 8, 1906.

"*Mr. C. C. Coleman, Attorney-general, Topeka, Kan.:*

"DEAR SIR—Under the provisions of the law passed at the last legislature, as found in chapter 482, a number of food products have been sent to the chemical departments of the State University and the Agricultural College for analyses. Such analyses have been completed and reports returned to this office.

"We are at a loss to know the real meaning of section 2 of this act—that is to say, which board is it—the State Board of Health, the county board of health, or city board of health, as the case may be—whose duty it is to render an opinion as to what portions of the chemist's report shall be printed in the official county paper, and which board's duty it is to pass upon the question as to what foods that are found adulterated are injurious to the public health? It seems to be clear that it is the duty of the State Board of Health to publish the reports of the chemist quarterly, and to send a copy of such report to every city and county board of health. Then it adds, "and said board shall," etc. Please give us an opinion on this matter in order that this Board may be advised as to what final disposition to make of the chemist's report.

"I enclose correspondence from Mr. C. D. Welch, attorney for the State Board of Health, relative to the matter. Judge Madison being a guest at our house some time since rendered a contrary opinion to that of Mr. Welch, and therefore I am unsettled as to how further to proceed.

"Awaiting your early reply, I am, Sincerely yours,

S. J. CRUMBINE, *Secretary.*"

To this the following reply was received:

"TOPEKA, January 9, 1906.

"*Dr. S. J. Crumbine, Secretary State Board of Health:*

"DEAR SIR—I have your favor of the 8th inst. in which you inquire as to the proper construction to be placed upon section 2, chapter 482, of the Session Laws of 1905, and I herewith return to you the correspondence which I received with your letter.

"The purpose of chapter 482 is, clearly enough, to furnish means whereby citizens of the various counties and communities shall be informed of the facts in regard to any article of food or drink manufactured and sold in their respective communities, and the purpose of the publication provided for is to make it in such manner that it shall reach those for whom the publication is intended. Section 2 is as follows:

"'It shall be the duty of the State Board of Health to make a record of the reports received from the said chemistry department of the said Kansas University and State Agricultural College, and said State Board of Health shall have compiled and printed quarterly, and a copy thereof sent to each county and city board of health within the state of Kansas. Said board of health shall examine said reports and analyses therein contained, and in all cases wherein any impure or poisonous substance is contained, detrimental or injurious to the health of those consuming or using the same as food or drink, said board of health shall publish and cause to be made public the name of the article or articles so found to be impure and injurious to health and the name of the manufacturer thereof, where the same can be ascertained, the same to be published in the official county paper and paid for as other county or city printing.'

"It will be noted that the State Board of Health is required 'to make a record of the reports received from said chemistry departments,' and is required 'to have compiled and printed quarterly, and a copy thereof sent to each county and city board of health.' It will be noticed in this sentence that 'the State Board of Health,' in the printed edition of the law, is designated with capital initials, while the county and city boards of health are distinguished by the absence of capitalization; and it will be noted that the clause of the act which seems ambiguous uses the latter form of the expression 'board of health.' In addition to this, it will be noted that unquestionably the same board of health is required to make the examination of the said reports and analyses and to determine the existence in the articles alleged of impure and poisonous substances which is required to cause the same to be made public by publication. It will be noted also that the publication provided for is required to be made in the official county paper, and to be paid for by the local county and city governments. It would be an unprecedented provision which would authorize the State Board of Health to require publication in the county official paper, and at the county expense. It therefore seems to me that the proper construction of the section is that the State Board of Health will have finished its duty when it has compiled the reports and analyses and furnished copies thereof to each county and city board of health within the state, and that the subsequent duty of examining said reports and analyses, determining all cases wherein any impure or poisonous substance is contained, detrimental or injurious to health, and of causing publication of such finding as required in the section are to be performed by the local boards of health of the cities and counties.

"I am aware, of course, that the capitalization of itself cuts but little figure, and it is apparent that the language is somewhat ambiguous and might with fair reason be given either construction; but this fact taken in connection with other considerations lends some weight. I have given that construction which seems to me the most logical and natural as drawn from the context, and from the usual methods of transacting analogous public business. For the purposes of uniformity in all parts of the state, it might be desirable that this examination and determination should be made by the State Board of Health; but I conclude that the other boards were meant by the legislature. I apprehend that the State Board of Health in making its report will sufficiently signify its own conclusions as to the character of the articles submitted to analysis. Respectfully yours, C. C. COLEMAN."

Acting on the authority of the attorney-general that county health officers should publish in the official county papers such portions of the report as were designated by the law to be published, the following letter was sent to county and municipal health officers:

"TOPEKA, February 3, 1906.

"DEAR DOCTOR—I desire to call your attention to the analyses of food products, the report of which is contained in the enclosed bulletin. Under the caption 'Special Notice to County and Municipal Health Officers' is defined your duties under the law in the disposal of this report. I trust that you will take the matter up with your board of health at the earliest possible date, and in compliance with the law publish such portions of this report which you and your board conclude come under the provisions of the law.

"In a letter received from the chief of the Bureau of Chemistry, United States Department of Agriculture, I have to inform you that bulletin 69, which was requested sent to your address, cannot be furnished except by an application to the superintendent of documents, government printing office, such application being accompanied by five cents in payment for such document. Bulletins 13 and 15 have been sent you, and I trust ere this you have received same, and that a careful reading will enable you to come to a correct and proper conclusion concerning the matter of food adulterations and preservatives. Very truly yours, S. J. CRUMBINE, *Secretary.*"

The secretary recognizes that the matter of determining what adulterations are wholesome and what are injurious is, in many instances, quite impossible, as the number of experiments thus far made does not justify one in a final conclusion. This is particularly true concerning the wholesomeness or otherwise of phosphate or alum-phosphate baking-powders. In conformity, therefore, with this opinion, the following letter was sent to county and municipal health officers:

"TOPEKA, March 1, 1906.

"DEAR DOCTOR—As the controversy concerning whether or not phosphate or alum-phosphate baking-powders are injurious to those using foodstuffs prepared with such powders has not yet been fully determined, and as the Bureau of Agriculture has thus far given no expression of opinion on this subject, it is suggested that county and city boards of health suspend judgment on these powders for the time being, and until further data can be had for arriving at a final conclusion as to whether or not alum powders would come under the purport of the law as such foods to be published in the official county paper as being injurious to the public health. The Board is engaged in a painstaking investigation of this subject, and when a conclusion based on experimental evidence has been arrived at, such knowledge will be published in the monthly *Bulletin.*

"It is urged that the pure food bulletin be brought before the attention of each county and city board of health, and that the requirements of the law be complied with as to publication of such articles as are found injurious to the health of those consuming same.

Very truly yours, S. J. CRUMBINE, *Secretary.*"

On March 18 his excellency the governor requested that I go to Winfield and inspect the Cowley county jail, in which institution the famous labor agitator, Mr. Ireland, was confined. It had been presented to the governor that the jail was exceedingly filthy, and that Mr. Ireland's health was such that it was dangerous for him to be confined there. The following letter to the governor covers the result of this trip:

"TOPEKA, March 28, 1906.

"*Hon. E. W. Hoch, Topeka, Kan.:*

"DEAR SIR—I have to report to you that on March 19, in company with the assistant attorney-general, Mr. Dawson, I visited the Cowley county jail, at Winfield, Kan.

"I am at a loss to express my surprise at the filthy and unsanitary condition in which I found the jail. The building is an old one and has not been kept in repair; the odor, upon entering, attracts one's attention immediately. On the second floor are kept the eight or nine prisoners at the present time confined in the jail. The walls are black and dirty and the ceilings festooned with ancient cobwebs; the wall back of the cages covered and encrusted with the accumulation of tobacco juice and expectoration covering a period of years, no doubt. The iron bars of the cage itself, and the floor, particularly back of the cells, are a mass of dirt and filth. In one portion of the iron cage was found a heap of debris and dirt which had been swept there by one of the prisoners, who told me that it was allowed to remain several days at a time before it was removed by those having authority.

"The same condition was found in the detached rooms where Mr. Ireland was kept. Ashes, coal cinders, egg-shells, paper and dirt were found upon the floor, and around one of the bowls of the closet was found water mixed with dirt, and the bowls were in such a vile and filthy condition as to be beyond description.

"The bedclothing consisted of ancient comfortables, that is, cotton quilted between two layers of cheap, highly colored cotton goods, which cannot be washed satisfactorily. These were filthy.

"The sewer-pipes leading from the closets to the cesspool, which is but a few feet from the south end of the building (I believe it is the south end), we found to be leaky, permitting the gas from the cesspool to leak into the building. One loose joint around the bowl had been fixed by a plugging of old rags, which, of course, was neither gas- nor water-tight.

"The cells on the first floor were so filthy and damp and out of repair as to be absolutely uninhabitable.

"Complaint was made by all the prisoners and several of the officials in charge of the jail that when the cesspool was pumped out, which occurred every night or second night, the odor in the jail was almost unendurable during the process of pumping.

"Further description of the jail fails me, except to say that it is absolutely unsanitary, dirty and filthy in the extreme, and shows a lack of management on the part of the official whose duty it is to look after such affairs. It is true that while the building is sadly in need of repair, that much of the filth could be removed and not be permitted to accumulate. The walls might be brightened and rendered sterile by the application of whitewash or calcimine, and some respect paid to the sanitary surroundings of those who have to stay there.

"I met Mr. Ireland, and made a careful examination of his physical condition. He is a man five feet nine inches in height and weighs 125 pounds. This is somewhat less than he weighed before being confined in the Cowley county jail, according to his statement. Mr. Ireland looks pale and anemic, is poorly nourished, has bad teeth and foully coated tongue, and alleges that he has a poor appetite. Upon inquiry, I found that his mother died of consumption, a younger brother died of consumption, a sister is suffering from the disease at the present time, and another brother has had to relinquish his trade as a jeweler and seek the higher and drier climate of the West on account of a tendency toward this dread disease. Mr. Ireland is distinctly of the tubercular type, and confinement in an institution of this kind is not conducive to the maintenance of a rugged vitality, which is essential in combating this fatal disease.

"It is true that vile odors and distasteful surroundings do not occasion disease *per se;* nevertheless, it is also true that one's vital resistance may be so lowered by unsanitary surroundings and the inhalation of foul gases, accompanied by mental disturbances, as to make one an easy prey to infectious diseases.

"In an interview with Doctor Kessler, the county health officer of Cowley county, he agreed with me in the opinion herein expressed, and further agreed, upon my suggestion, to file a remonstrance with the board of county commissioners, who constitute the county board of health, against the unsanitary condition of the jail, offering suggestions in detail as to what should be done to correct these conditions. It is hoped that for the sake of common humanity they will take speedy action in rendering the Cowley county jail habitable. Very truly yours, S. J. CRUMBINE, *Secretary.*"

In the latter part of February I received a long-distance 'phone message from the mayor of Baldwin, Kan., reporting that a child was very ill in his city and under the care of so-called Christian Scientists, and that the parents denied the child any regular medical attendance. He asked if the department of health could not interfere in the case and compel the parents to allow the little sufferer proper medical attention. My reply was, that I was not aware of any law whereby this department could interfere, unless the child was ill of a contagious disease, and advised that the mayor send a physician there to make a diagnosis. A physician was sent, and a diagnosis made of meningitis due to middle-ear disease. I then gave a final opinion, that this Board had no right under the law to interfere in the case, but suggested that the probate judge be requested to appoint a guardian for the child on the theory that the parents failed to properly provide for it. This was not done, but the county physician was called. The following letter, received from Doctor Clark, is explanatory of the situation:

"LAWRENCE, March 3, 1906.

"DEAR DOCTOR—I went to Baldwin last Monday, February 26, and saw the case of supposed cerebrospinal meningitis, which was being treated by so-called Christian Science, and denied regular medical treatment. The girl was four years old, and had been well up to about ten days previous, with the exception of a suppurating ear.

"It was undoubtedly a case of otitis media, with secondary involvement of the meninges, and the child was completely comatose and moribund when I saw her.

"She died two hours later. Of course there was nothing for me to do in the matter. Such things ought to be stopped, but it seems to be perfectly legal to commit homicide in that way. Supposing this had been cerebrospinal meningitis, what could I have done when the law mentions only epidemic cerebrospinal meningitis, this being the only case in town? In other words, what constitutes an epidemic in the meaning of the law? I would like to have a ruling on that point. Very truly yours,

A. W. CLARK."

In order to fortify myself as to my action should future cases of this kind arise, I submitted Doctor Clark's letter, together with the statement of facts, to the attorney-general for his opinion, which opinion is given in the following letter:

Dr. S. J. Crumbine, City: "TOPEKA, March 22, 1906.

"DEAR DOCTOR—Your letter of March 16, inclosing an inquiry from Dr. Arthur Clark, of Lawrence, is received.

"I do not think that the inquiry calls for a definition of what constitutes an epidemic, as the doctor seems to indicate. I am rather of the opinion that the most mournful story related by him is one of clear criminal neglect, and one in which the authority of the officers of the county or city was ample and their duty plain. This was not a case for recognition by the State Board of Health or the county health officer to any greater extent than it was noticed by Doctor Clark. It was proper for him to call and examine the child as he did do. The child should then have been removed by the authority of the sheriff, constable or police officer of the county or city for proper treatment. Sections 2037 and 2038 of the General Statutes of 1901 supply ample authority for the conduct of such officers in such a case. I think in every such case their attention should be directed to such cases of unlawful and palpable neglect as the one related. I would suggest further, that if the matter were carefully examined by the county attorney of the county in which this outrage occurred, that such officer might find ample cause to prosecute the parents of such child who caused or allowed the death of the child.

"Trusting that this furnishes you the information desired, I remain,

Yours very truly, C. C. COLEMAN."

I have not been advised whether or not prosecution of the parents has been made, in accordance with the above opinion.

On March 5 a petition was received, signed by a large number of citizens of Narka, complaining of a slaughter-house which was exceedingly offensive and a public nuisance, whereupon Doctor McFarland, county health officer of Republic county, was ordered to visit that city and make a thorough investigation, and if the allegations were true as set forth in the petition, to order the abatement of same. A letter from Doctor McFarland indicated that the visit was made and the nuisance abated.

Shortly after the appearance of the March *Bulletin*, which was devoted very largely to the publication of analyses of a number of baking-powders, several of the baking-powder companies attempted to use garbled portions of this report for advertising purposes. Correspondence was immediately opened up with these companies, and a protest made in a most vigorous fashion against the manner of such advertising, it being made to appear in each instance that the State Board of Health had given their endorsement to these special brands of baking-powders. All these companies willingly withdrew these advertisements with the exception of one, the great baking-powder trust known as the Royal Baking Powder Company, and they refused to recede from their position, giving the ingenious argument that they were willing to cooperate with the State Board of Health in the dissemination of useful information as to wholesome food products, etc.

During April and May a large number of cases of smallpox occurred at Isabel and Niles, which were unrecognized for a sufficient length of time to infect a large number of people, covering a large area of the community. There was considerable controversy between the school-teachers, local health authorities and county health authorities at Isabel, to which little attention was paid by this Board on account of the manifest local prejudice, with which we had nothing to do.

At Niles a rabid controversy was under way concerning the diagnosis of the eruptive disease. It being impossible for the secretary to go to that point, on account of a trip to Ellinwood, which was of vastly more importance, a telegram was sent to the county health officer of Dickinson county, asking that he act as deputy and visit Niles. The county health officer, Doctor Conklin, was selected for this special trip by reason of the fact that Niles is close to his border lines, and complaint had been made by the people of his county that the disease was not being properly cared for or quarantined, and was going over into Dickinson county. Doctor Conklin reported the disease as being smallpox beyond any question of doubt, and that thirty or forty cases were present in the village of Niles, whereupon Doctor Smith, county health officer of Ottawa county, was informed by telegram to proceed to that place and quarantine every case he could find, after searching investigation. Subsequent reports indicate that this was done, and the epidemic has at this time about abated.

On May 6 the secretary made a trip to Ellinwood to investigate the cause of the continued prevalence of typhoid fever at that point, it having been reported that there had been typhoid there continuously for the past year. The report of this visit is embodied in the *Bulletin* for May, which is hereby made a part of this report. I desire in this connection to again emphasize what was stated at that time, that the construction of cesspools from which the drainage is allowed to empty into water stratum should receive the most severe condemnation by this Board at this session, and a resolution should be passed instructing the secretary to order the abatement of all such cesspools, through the various county health officers, with instructions to bring suit for prosecution for all failures to do so. The prevalence of typhoid fever throughout the small villages of Kansas is in my judgment very largely attributable to this fact.

On May 21, 22 and 23 your secretary went to the capital city, Washington, to attend the twenty-fourth annual conference of State and Territorial Boards of Health and the fourth annual conference of United States Public Health and Marine Hospital Service with State and Territorial Boards of Health. This was the first time that Kansas has been represented in this annual conference. I beg to assure you that it was the most interesting and profitable meeting which it has ever been my privilege to attend, and the time and money so spent in attendance thereon was certainly well spent.

In the opening session, Doctor Lewis, secretary of the State Board of Health of North Carolina, devoted the major portion of his address to the tuberculosis problem. In this he contended that the final solution of this great problem must lie along the lines of education. He called attention to the dangers that might come from the establishment of state sanatoria, in that people would feel a sense of security that the problem had been solved with the establishment of such institution, and that the small number of people that could be treated in such an institution was simply touching the fringe of its proper solution. He contended that if the same amount of money necessary to support such an institution was spent in educational methods along the lines of tuberculosis displays and lectures by experts going from place to place and village to village throughout the state, coming in personal contact with the people and permitting personal consultation, that infinitely more good could be accomplished by the dissemination of knowledge than by the establishment of a state institution.

While I believe that his point was radical, yet it contained an element of truth, and I discovered that the swing of the pendulum has gone clear over to the educational side of this great problem. Indeed, I am personally convinced that the final solution of the problem is one of prevention and not of cure.

A portion of the afternoon of the first day was devoted to an experience meeting, and Kansas was called on to state why she had not hitherto been represented in this annual conference. This discussion became quite general, and a committee was appointed to report to the conference some plan or method by which all states might be adequately represented each year. The report of this committee resulted in a motion to send a personal letter to the governor of each state, the initial one being directed to Governor Hoch, of Kansas. It was pointed out in this letter that the government had seen fit to peculiarly favor the state boards of health, in that Congress had passed a law authorizing the surgeon-general to call together annually representatives of the boards for consultation with his department along the lines of public health. This law also made it possible that any five states that might petition collectively the federal government might receive the aid of the marine hospital service in the suppression of a threatened epidemic, and that states that did not avail themselves of the offer of the government of the call to meet in annual conference could not expect the aid of the government in times of distress or threatened epidemic. This, then, seems to put the matter up to Kansas to attend these annual meetings, or be deprived of very valuable assistance which might be needed in the future.

Among other subjects discussed were those of car sanitation, pollution of streams, and a plan for utilizing the United States public health service in the development of local sanitary government. The secretary cannot, in this brief report, outline, even in a small way, the many excellent things that were said concerning these matters.

Suffice it to say, that the government has taken up the tuberculosis problem among government employees, and has laid down strict rules concerning the relation of tubercular employees to the government service, prohibiting spitting in government buildings, has gotten out considerable literature along educational lines, and has provided means whereby they may have free examination in suspected cases.

The greater part of one day was taken up in the discussion of that important problem, car sanitation. Doctor Rosenau, director of the marine hospital laboratories, gave an extended talk on this subject, in which he spoke of the extensive experiments made by that bureau in the examination of the bacterial content of railway coaches, and suggestions for the betterment of car sanitation. He advocated the abolishment of the common drinking cup, that running water be provided in the toilet-rooms for washing purposes, and that separate places should be constructed for the washing of the teeth. In experiments made along this line he startled the conference by making the announcement that much of the fumigation that had been done hitherto with formaldehyde gas was practically ineffective, that a large number of experiments had been made, and conclusions arrived at that disinfection with formaldehyde gas in an atmosphere the humidity of which was below sixty-five per cent. or the temperature below sixty degrees, was not effective in many of the germs, particularly that of the bacillus of tuberculosis, and that with our present knowledge of disinfectants and germicides the old-fashioned sulfur dioxid was now the best. Of course it was recognized that this had its limitations because of its destructiveness of fabrics. One of the assistants of the laboratory made an announcement later that extended experiments were being made at the present time, in which it was hoped, and this hope was based on considerable affirmative evidence, that the formaldehyde difficulty was about to be overcome by the addition of some other ingredient. I did not learn for sure what that other ingredient was, but incidentally it was thought by a number of those who seemed to know, that it was hydrocyanic acid gas.

Another subject that received a great deal of attention was that of the dairy and pure milk problem. Your secretary received much interesting information along this line, and supplied himself with the system of blanks, literature, etc., that is in operation in the District of Columbia, and which should form the basis of a bill to be passed by our next legislature.

One of the things that I quite anticipate would be of interest to this Board, was the authoritative announcement that the tuberculin test in cattle is not entirely reliable—that in many instances cattle injected with tuberculin will react, when as a matter of fact there is no tuberculosis present.

Before the meeting closed it was indicated by the surgeon-general, after a full and free discussion by all the states represented, of which there were thirty, including the territory of Porto Rico, that he would order the abolishment of the common drinking-cup in all interstate trains, after, of course, a conference with the American Railway Association and an opinion that such an order could be legally made. It was pointed out that with the abolishment of the cup not only much danger would be averted in the spread of disease, but the educational value of such an order would be of the greatest importance.

In conformity with a resolution of the Board passed about a year ago, instructing the secretary to enter into cooperation with the Western states concerning the matter of railway-car sanitation, I had the opportunity of talking with several secretaries of the western state boards of health, concerning this matter, and it was agreed that we take some uniform action concerning the same. No definite plan was adopted, but upon arriving home I determined to initiate the movement myself. I did this by submitting the following letter to all railways and electric lines in the state of Kansas:

"TOPEKA, June 2, 1906.

"DEAR SIR—At a conference of State and Territorial Boards of Health with the Public Health and Marine Hospital Service, held in Washington, May 21, 22 and 23, the subject of car sanitation was the principal topic of discussion. It was the unanimous voice of the conference that there was an urgent need for sanitary improvement in the matter of cleansing and care of railway coaches.

"The executive officers of a number of the western states agreed to call the attention of the respective railroads operating in their states to some of these needs, and after careful investigation of the rules and regulations enforced in some of the states it was thought that the rules recently adopted by the Indiana state board of health, which were the result of a conference of a committee from that board with a like committee representing the railroads, electric lines and steamboat companies, were fair and equitable, and could be put in operation without much expense to the companies, and satisfy in a measure the urgent necessity of the situation. Therefore these rules are submitted for the consideration of the proper officials of your company, with the hope that they will receive your indorsement and consent to have them observed.

"On pages 2, 3 and 5, under the heading of "Suggested Rules," are the rules suggested by this Board, in addition to those adopted by the Indiana board, and which in my judgment should be included.

"I desire to particularly call your attention to suggested rule 8, on page 5. Complaint has been made to this office frequently concerning the dry sweeping of coaches while in transit. Such practice is not only extremely disagreeable to the passengers by raising a cloud of dust, but is not unattended with real danger, as it is well known that dust is a medium or carrier of pathogenic germs.

"Such suggestions in the shape of modifications or additions that your company cares to make will be gladly received. A similar letter has been sent to all railways and electric lines doing business in this state.

"I might add that the surgeon-general thought that his department would issue an order for the abolishment of the common drinking-cup in all interstate railway-trains, provided, of course, that such action would meet with the approval of the legal department.

Very truly yours, S. J. CRUMBINE, *Secretary.*"

"RULES OF THE KANSAS STATE BOARD OF HEALTH

"Governing the sanitation of steam-railway coaches, dining-cars, sleeping-cars, suburban electric cars and city street-cars.

"RULE 1. *Steam-railway Coaches.* Day coaches shall be thoroughly cleaned at the end of each trip, and in no instance shall a day coach go uncleaned longer than two days. The thorough cleaning of the day coaches shall consist as follows: (*a*) Windows and doors shall first be opened and the aisle strip, if there be any, removed from the car; (*b*) all upholstering dusted and brushed; (*c*) floor mopped or swept after it has been sprinkled with water, to which may be added an approved disinfectant; (*d*) after cleaning as in (*c*) the floor should be scrubbed with soap and water, to which soda ash or like cleansing agent may be added, and after scrubbing the floor should be mopped with a solution of formaldehyde of one or two per cent. strength, or with a solution of other approved disinfectant; (*e*) all arms of seats, panels between windows, window ledges, windows, doors and door-knobs shall be washed with soap and water, to which a cleansing agent may be added, and after washing should be wiped off with an efficient disinfecting solution; (*f*) closet floors and walls shall be cleaned by sweeping and washing and wiping with a disinfecting solution, and urinals and hoppers thoroughly cleaned and disinfected; (*g*) water-coolers shall be frequently emptied, rinsed and scalded, and shall be filled with potable drinking water when in service; (*h*) and lastly, day coaches shall be disinfected with formaldehyde gas in quantities of not less than forty fluid ounces of forty per cent. formaldehyde to each coach at the period of general cleaning and renovation, said period not to exceed ninety days, and also whenever a case of any listed disease is known to have been carried. Plush seats and backs shall be removed when possible, and dusted by air-blast."

(Suggested rule): Coaches shall be provided with cuspidors.

"RULE 2. Placards shall be displayed in all railway waiting-rooms in Kansas, having plainly displayed thereon the following notice: 'Spitting on the floor is forbidden. Consumption, la grippe, coughs, colds, and all diseases of the air passages are spread by spitting. It is therefore forbidden to spit on the floor. Penalty, five dollars fine. It is the duty of trainmen to warn against violating this health rule. By order of the Kansas State Board of Health.'"

(Suggested notice): Do not spit on floor; to do so may spread disease.

"RULE 3. Parlor-, buffet- and dining-cars shall be cleansed at cleaning terminals, as set forth in rule 1, carpets and draperies to be removed, dusted, sunned and aired, provided meteorological conditions permit. Food boxes, refrigerators, closets, drawers and cupboards to be cleansed, scalded and treated with a one- or two-per-cent. solution of formaldehyde at least once a week in spring, summer and autumn months, and once every two weeks in winter months.

"RULE 4. Suburban, electric and street-cars shall be cleansed as follows: (*a*) Windows and doors shall be open and the aisle strip, if there be any, removed from the car; (*b*) all upholstering dusted and brushed; (*c*) floor mopped or swept after it has been sprinkled with water, to which should be added an approved disinfectant; (*d*) after cleaning as in (*c*) the floor should be scrubbed with soap and water, to which soda ash or like cleansing agent may be added, and after scrubbing the floor should be mopped with a solution of formaldehyde of one- or two-per-cent. strength, or with a solution of other approved disinfectant; (*e*) once each week the arms of seats, panels between windows, window ledges and windows shall be washed with soap and water, to which cleansing agents may be added, and after such washing should be wiped off with an efficient disinfectant solution; (*f*) closet floors and walls shall be cleansed by sweeping, washing and wiping with disinfectant solution every week, the floors of closets, urinals and hoppers shall be thoroughly cleansed and disinfected every day; (*g*) water-coolers shall be frequently emptied, rinsed and scalded, or they may be disinfected with a two-per-cent. solution of formaldehyde, and shall be filled with potable drinking water when in service; (*h*) electric suburban coaches shall be disinfected with formaldehyde gas in quantities of not less than twenty fluid ounces of forty-per-cent. formaldehyde to each coach at the period of general cleaning and renovation, not to exceed ninety days, and, also, whenever a case of any listed disease is known to have been carried. Plush seats and backs shall be removed, when possible, and dusted by air-blast. Carpets and mattings are condemned and forbidden in smoking compartments, but rubber aisle strips or linoleum may be used. Placards shall be displayed in all waiting-rooms and stations located in towns, villages and cities in Kansas, having plainly displayed thereon the following notice:

(Suggested notice): Do not spit on the floor; to do so may spread disease.

"RULE 5. Conductors and brakemen in charge of steam trains, and conductors and motormen in charge of suburban electric and street-cars, shall pay proper attention to ventilation, and shall promptly reprove and warn all persons who spit on the floor or otherwise befoul the car in which they are riding. They shall also inquire concerning any case of sickness which they may notice, and determine as best they can whether or not it is a listed disease, and, if found or suspected to be listed, the health officer at the next stop may be appealed to for the purpose of caring for the case as seems best.

"RULE 6. *Sleeping-cars.* Upon arriving at cleaning terminals, sleeping-cars shall be cleaned as follows: (*a*) Windows, doors and ventilators opened; (*b*) upper berths let down, seat bottoms lifted off, and mattresses, blankets, pillows and curtains, etc., loosely displayed for airing; and, provided the weather will permit, all the articles named shall be aired outside the cars; (*c*) carpets, rugs and portieres shall be removed from the cars, weather permitting, and dusted and aired in the open; otherwise the work shall be done as best can be in the wide-opened car; (*d*) after cleaning, the floor should be scrubbed with soap and water, to which soda ash or like cleansing agent may be added, and after scrubbing the floor should be mopped with a solution of formaldehyde of one- or two-per-cent. strength, or with a solution of other approved disinfectant; (*e*) all windows and woodwork shall be thoroughly cleaned and disinfected with approved detergents, and carefully wiped; (*f*) closets, spittoons and toilet arrangements shall be thoroughly cleaned and disinfected with an approved disinfectant every day; (*g*) sleeping-cars shall be disinfected at least once a month in an approved manner with formaldehyde gas, as set forth in (*h*) of rule 1, and they shall also be disinfected if at any time it is known that a person with a listed infectious disease has been carried. Pullman conductors and porters shall see to it that as good ventilation as is possible is always maintained.

"RULE 7. The listed diseases are declared to be: Smallpox, diphtheria, scarlet fever, erysipelas and measles. All common carriers and their employees are forbidden to knowingly carry any person afflicted with the above-named diseases.

"RECOMMENDATION.

"It is recommended that conductors and brakemen be supplied with pocket-pads having the following notice printed on each slip: 'Health notice.—Spitting on the floor is forbidden. It is filthy, makes a nuisance, and is contrary to law. All diseases of the lungs and air passages, also certain other diseases, are spread by dried spit. Spitting on the floors and sidewalks must stop. Ladies do not spit. Gentlemen will not spit.—Kansas State Board of Health.'

"Conductors and brakemen should hand these slips to spitters. They may also be handed to passengers who are not spitters. Persistence in this matter will surely lessen the spitting evil. This will make traveling more pleasant and so encourage travel. Car cleaning will also be made less difficult and less expensive.

"RULE 8. (Suggested rule): Dry sweeping of cars while in transit is prohibited.

"DISINFECTION.

"The best and cheapest disinfection for cars and rooms may be accomplished in the following way:

"Close all openings and for each 1000 cubic feet use six and one-half ounces of permanganate potassium and one pint of forty-per-cent. solution of formaldehyde. Place the permanganate in a large tin dishpan or any like vessel, then pour the formaldehyde solution upon it. The formaldehyde gas will be quickly set free and will penetrate plush, curtains, carpets, and all parts of the car or room, causing complete disinfection. The rapid disengagement of the gas is an important point, and this method further commends itself because no fire or apparatus is required."

Copies of this letter and the rules were sent to the secretaries of the boards of health of Missouri, Nebraska, Iowa, Colorado, Utah, Oklahoma and Wyoming. It is hoped that this uniform campaign will prove of value and will result in the final adoption of some specific rules governing this most important subject.

It has been my observation that the intent and purpose of the publicity law as passed by the last legislature has failed in a part, namely, the publication by county and municipal boards of health, of such portions of the report, as, in their judgment, are injurious to those consuming such adulterated food and drinks. I have not been made aware that this law has been in a single instance complied with. It is true that much good has been accomplished by the publication of such reports in the *Bulletin* which were partially copied by the daily press. I believe the duty of this Board, regardless of the imperfections and limitations of the law as we have it in the statute-books, now that we have entered upon this pure food campaign, is to do what we can to prevent the adulteration and sophistication of food that is harmful and fraudulent to consumers, at the same time being mindful of the commercial interests involved in these great enterprises. In order to form a basis of recommendation of rules to the Board along the lines above indicated, the following letter was sent to all packing-houses, manufacturers of food products and wholesale grocers of the state, whose addresses we could get:

"TOPEKA, June 8, 1906.

"DEAR SIR—This office desires the opinion of manufacturers of meat and food products in Kansas on the following questions, the replies to be used as a basis for recommendations by the secretary to the State Board of Health, and for no other reason.

"We recognize the many difficulties in the way of an ideal system of presenting to the consumer meat and food products that are both wholesome and attractive, and we mean to be fair and impartial to these great industries, while at the same time conserve the health and interest of the consumers. With this end in view, the following questions are submitted:

"1. Do you know of any reason, either commercial or sanitary, why the use of artificial coloring matter in meat and food products should not be discontinued as contemplated by the law, section 2325?

"2. Do you consider it absolutely necessary to use preservatives in your mixed or compound meat or food products? If so, why? What products, kind and name? Kind and minimum amount of preservative that could be used?

"3. What objections have you, if any, to distinctly labeling all packages, cases, cans and products, setting forth the kind and nature of the mixed or compound food, and the name and amount of preservative used?

"4. What reasonable objection could be offered to the Board's insistence on a literal compliance with all other provisions of the pure food laws of Kansas?

"A similar letter has been sent to all packing-houses, manufacturers of food products and wholesale grocers in Kansas. Trusting that you will be free and frank to state your opinions, and assuring you that your replies will be used only in the manner above indicated, I am,

Very truly yours, S. J. CRUMBINE, *Secretary.*"

Fourteen replies were received to the letter of inquiry. These letters, with the suggestions contained therein, have been carefully considered and due weight given to the supposed necessity which exists concerning the use of coloring matter, preservatives, and correct labeling of products. After a painstaking review of all the literature on the subject that has come within my reach, and a conscientious study of the problems involved taken in connection with the replies received, I have prepared a number of rules which I desire to submit to the Board for their approval.

"1. The use of artificial coloring matter in meat products is prohibited.

"2. All other food products and beverages must be free from coal-tar dye, or other injurious dyes.

"3. The use of chemical preservatives, such as formaldehyde, benzoic acid, sulfurous acid, boracic acid, salicylic acid, hydrochloric acid, saccharin, betanaphthol, or any salt or antiseptic compound derived from these products, is prohibited in food and drink products, except as hereinafter provided.

"4. The use of benzoate of soda is permitted in perishable goods in quantities not greater than one-half of one per cent.. provided such product is distinctly labeled, setting forth the kind and amount of preservative so used. This use of boric acid, or its boron equivalents, is permitted in compound meat products in amounts not to exceed one-half of one per cent., provided that such product be properly labeled or tagged as containing such preservative, and the amount so contained. The use of salicylic acid is permitted in perishable products in amounts not to exceed one-half of one per cent., provided such product be properly labeled or tagged, stating the kind of preservative and the amount used.

"5. All food and drink products must be labeled true to name in every respect.

"6. Every package, bottle or carton must bear the true net weight.

"7. Every package, bottle or carton must bear the true name of the manufacturer or jobber.

"8. Every package, bottle or carton must show the true grade of class of the goods.

"9. Mixed or compound food products must be properly labeled as such.

"10. Vinegar must be sold under true names. Cider vinegar must be made wholly from apples.

"11. Coffees must be pure, free from chicory, and not extracted.

"12. Extracts must be pure and what they claim to be.

"13. Candies must not contain coal-tar dyes, or harmful products such as terra alba, barytes, talc, etc.

"14. Sausages must not contain tainted or decomposed meats, and must not contain prohibited preservatives, coal-tar dyes or starch fillers.

"15. Spices must be labeled as to their exact composition.

"16. Milk, cream and butter must measure up to the standard of requirements adopted by the United States Department of Agriculture, and be free from preservatives.

"17. All fruit products must be distinctly labeled as to their composition, and be free from prohibited preservatives and coal-tar dyes.

"18. If adulterated foods and drinks injurious to the health are offered for sale they are subject to confiscation and destruction, and the person or persons so fraudulently adulterating such foods are subject to imprisonment and fine.

"19. All other mixtures, compounds, powders, or products, used as foods or drink, must be accurately labeled as to their composition, and stating the kind and amount of preservative used, if any is used.

"20. The standards of purity, quality and strength adopted by this Board are those adopted by the United States Department of Agriculture.

"21. Any citizen may have foods analyzed at the laboratories of the State University, at Lawrence, or the State Agricultural College, at Manhattan, if same is sent through their local or the State Board of Health.

"22. Four times each year county boards of health must publish in the official county paper a list of all adulterated foods and drinks injurious to the health of those consuming them, as found in the official publication, the *Bulletin*, of the Kansas State Board of Health."

I would respectfully recommend that the Board's attorney be instructed to submit these rules to the attorney-general for their joint consideration, to see whether in any respect such rules or any parts of them could not be enforced by such authority as the Board has in a general way, with what specific laws we now have on the statute-books. I would suggest further that such changes, if any should be made after such consultation, be entrusted to a committee composed of the Board's attorney, Doctor Lerrigo, and the secretary, and that such revision stand as the rules adopted by this Board.

It is the plan of the secretary, after the rules are finally adopted, to furnish every packer, manufacturer of food products and wholesale jobber with a copy of the rules, which, together with the publicity given by the daily press to such important measures and their publication in the official *Bulletin*, will be sufficient notice of their adoption.

Several replies have been received to the letters sent to transportation companies concerning improved car sanitation, but not a sufficient number to make a report to the Board at this time. I have reason to hope that the matter will receive the favorable consideration of the transportation companies.

In the published proceedings of the joint conference of embalmers' examining boards and state boards of health, held in Niagara Falls, N. Y., October 9 and 10, 1905, a recommendation was made which, in my judgment, should receive the approval of this Board, and be adopted as a standing rule and regulation. The following is the report of the committee:

"The committee on president's address, to whom was referred the paper of Dr. C. O. Probst, would recommend:

"That the various state boards of health be requested by the secretary of this conference to adopt and promulgate for the adoption of local health authorities rules and regulations governing the embalmer in the preparation of bodies of persons that have died of dangerous communicable diseases, as follows:

"1. In the preparation of bodies for burial or transportation the following precautions shall be taken by the embalmer when death has resulted from any of the following diseases: Smallpox, typhus fever, diphtheria, scarlet fever and measles.

"2. Except where the room containing the body has been previously disinfected by the health authorities, the embalmer before entering such room shall don outer garments of rubber or cloth completely covering the body, and a cap to cover the hair. Upon leaving the room these shall be removed and placed in a bag or wrapped in a sheet or other covering, all of which shall be disinfected by formaldehyde fumigation, or boiling in water, as soon thereafter as possible. He shall also, before leaving the house, thoroughly disinfect his hands, giving especial attention to the finger nails.

"3. All knives, trocars, needles, syringes and other instruments, and all vessels, sponges, gloves, cooling-boards, or other things used in embalming or preparation of such dead bodies, or taken into the room by the embalmer, shall be properly disinfected immediately after being used.

"4. All fluids or other matter removed from such bodies in the process of embalming shall be mixed with an equal quantity of a five per cent. solution of either formalin or carbolic acid before being finally disposed of.

"(Or some similar rules.)

Wm. J. Phillips,
C. O. Probst,
Percy B. Dixon,
H. M. Bracken, *Committee.*"

Several months ago I noticed in reviewing the bulletin of the Iowa Board of Health that a bill had been passed by the state, making an appropriation of $3000, contingent upon a like amount to be appropriated by the United States Geological Survey, for the purpose of a sanitary survey of the waters of Iowa. It occurred to me that this was a most excellent solution of the water problem for Kansas, and I immediately opened up correspondence with the Department of the Interior, asking if such appropriation could be made by their department, and the survey made of the waters of Kansas. The following letter was received in reply:

"Washington, April 21, 1906.

"*Mr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:*

"Dear Sir—Your letter of April 11, addressed to Mr. F. H. Newell, chief engineer, has been referred to me for reply.

"It is the established practice of the Geological Survey to enter into coöperative relations with any properly accredited state authority, and appropriations made by such authorities have always been duplicated. There is no doubt that satisfactory arrangements can be made for a water survey if the state of Kansas wishes to enter upon such an investigation.

"The amount of money provided varies according to the character of the work desired, and contracts have been entered upon for the expenditure of sums varying from six hundred to many thousand dollars. Therefore the amount, $3000, mentioned in your letter, is not fixed. It will be well to consider the cost of the work which you desire to carry on and the equipment which you have already in hand. If you have a state laboratory and a state chemist whose services can be utilized in such an investigation, all the money appropriated for this especial work may be used to extend the investigation itself. If, on the other hand, you have no laboratory and no regularly paid chemist, the amount appropriated must be increased in order that it may be sufficient for the equipment of a laboratory.

"The Geological Survey has already done considerable work upon the character of Kansas waters, and there has been a need for further investigation in order that the Survey may publish a report. Your suggestion that the State Board of Health may be able to secure an appropriation for cooperative work seems to offer an excellent solution of the matter.

"Because of previous arrangements, it will be impossible for the Survey to appropriate more than $1500 to $2000, and if your Board desires to meet such an amount the matter can be given more detailed consideration at a later date.

"Please let me know as soon as possible if there is a probability that such an arrangement may be made. Very truly yours,

M. O. LEIGHTON,
Hydrographer in Charge, Division of Hydro-Economics."

A letter was addressed to Professor Marvin asking whether or not the laboratories of the State University might be used for doing the necessary laboratory work in making this survey. He replied that in taking the matter up with the chancellor an agreement had been entered into permitting the use of the laboratory for such work, and they would gladly avail themselves of the opportunity of cooperating with the work along this line.

A conference was then held with the governor and the matter laid before him, which received his hearty approval. The bill as suggested to carry out the work as herein outlined might be summarized in the following:

"A BILL for an act to determine the sanitary and other conditions and the nature of the natural water supplies of the state by conjoint action of the United States Geological Survey and the State Board of Health.

"*Be it enacted by the Legislature of the State of Kansas:*

"SECTION 1. The State Board of Health is hereby authorized to act with the United States Geological Survey in determining the sanitary and other conditions and nature of the natural water supplies of the state of Kansas, such water survey to have for its objects: (1) To determine the nature and condition of the unpolluted natural water supplies of the state; (2) to determine to what extent the natural waters are being contaminated by sewerage from cities; (3) to determine to what extent the natural waters are being polluted by industrial wastes such as come from glucose factories, creameries, smelters, refineries, and such other sources which produce pollution, and in what way these wastes might be utilized for beneficial purposes; (4) to investigate water-borne diseases and assist in determining the best source of water supplies.

"SEC. 2. There is hereby appropriated for the purpose of carrying out the provisions of this act, the sum of $——, provided that an equal sum can be obtained by and through the department of the United States Geological Survey for this work.

"SEC. 3. The State Board of Health is hereby empowered and instructed to make such rules and regulations in conjunction with the United States Geological Department as may be necessary to carry into effect the provisions of this act."

The nature and purpose of this survey are set forth in the provisions of the bill, and need no comments. Surely a rare opportunity is given to the people of Kansas to have this greatly needed survey, the field work of which will be done by trained experts of the federal government, at the same time paying half the bills, while the laboratory work will be done by competent men of our University. It does not seem possible that this bill could receive the opposition of any member of the legislature.

Respectfully submitted. S. J. CRUMBINE, *Secretary.*

Minutes of September, 1906, Meeting.

The State Board of Health met in quarterly session in the office of the secretary, at the state-house, at 1:30 P. M., September 14, 1906. All the members of the Board were present except Dr. H. M. Bentley.

The order of business was taken up after roll-call, and the minutes of the last meeting read and approved and ordered placed on file.

The secretary's report was then read and ordered placed on file.

A committee representing the wholesale grocery interests of Kansas being present, they were invited to address the Board. Informal talks were given by Mr. Trapp, of Leavenworth, Mr. George, of Hutchinson, and Mr. Hess, of Wichita, concerning the provisions of the national and state pure food laws. A summary of these talks was to the effect that the wholesale grocers were ready and anxious to help in the enforcement of the pure food laws of the state and nation. Inasmuch as the national commission had not yet decided upon the rules and regulations necessary to put into force and effect the national pure food law on January 1, 1907, the grocers requested that any further action by this Board be deferred until such time as the commission had formulated the aforesaid rules and regulations, and that the Board refrain from gathering samples of grocery supplies for analysis until after the 1st of January, 1907, in order that merchants who had stock upon their shelves that in many instances would not comply with the new regulations might have an opportunity of disposing of them. After an informal talk by members of the Board, upon motion, the request of the wholesale grocers was granted.

The recommendation of the secretary that a rule prohibiting the sale of undrawn cold storage poultry, game and fish be passed was then taken up, and, upon motion, the following rule was adopted:

> The sale at retail within the state of Kansas for human food of any domestic or wild fowl, game or fish that has been kept in cold storage with their entrails, crops and other offensive parts undrawn is prohibited. The service as food within the state of Kansas of any such domestic or wild fowl, game or fish is also prohibited.

The request of Mr. T. H. Lescher to reinter in the state of Kansas the body of George Lescher, which is now lying in or near Miramar, in Costa Rica, and who died on the 3d of May, 1900, cause of death being yellow fever, was granted, and accordingly the transit permit was issued to Mr. Lescher for that purpose.

The application for disinterment of Nellie Fields, who died on December 28, 1904, of scarlet fever, was refused, on the ground that two years had not yet elapsed from time of death.

Professor Bailey then read the following communication from Professor Sayre, of the University, and, upon motion, the Board accepted the kind offices of Professor Sayre for the purposes indicated.

LAWRENCE, September 13, 1906.

Dr. S. J. Crumbine, and Members of the Board of Health:

GENTLEMEN—It is my desire to inaugurate immediately a laboratory of investigation and publicity in connection with the adulteration of drugs and medicine. The trained men in pharmaceutical and medical chemistry of the school of pharmacy of the University are the proper state experts to take charge of this work, and with the training of higher students in such work it can be done most economically to the state.

Allow me to suggest that your Board sanction this view by official action. If you do this I am sure the State Board of Pharmacy will give their hearty support and will do all in their power to increase the laboratory facility and personnel of the department, consistent with a systematic work in the direction indicated.

Reports of above investigation will be submitted in duplicate to the Board of Health and Board of Pharmacy.

Respectfully submitted. L. E. SAYRE.

The special committee on revision of rules then made their report, and, after a few minor changes in a number of the rules, the report was adopted and ordered to be published in the official paper of the Board—the *Bulletin* of the Kansas State Board of Health—after which they would become the official rules and regulations of the State Board of Health.

Upon motion, the Board confirmed the action of the secretary in entering into contract with the United States Geological Survey for the sanitary survey of the natural waters of Kansas.

Upon motion by Doctor Scott, a new rule was adopted ordering the annual fumigation of all schoolhouses in Kansas and the inspection of all school privy vaults. It was also ordered that an annual inspection of all slaughter-houses within the jurisdiction of each county health officer be made.

Doctor Lerrigo, chairman of the committee on tuberculosis sanatorium, reported that the committee was unable to meet with the Board of Control previous to this meeting, and requested that the committee be continued. It was so ordered.

Doctor Scott then brought up the subject of a hotel cesspool in the city of Larned, which had been called to his attention. He asked for instructions as to what should be done in the matter. Certified copies of rules 1 and 2 were placed in his possession, with instructions to present to the city health authorities, which should form a basis as to the proper action to be taken.

Upon motion, it was ordered that all packing-houses in Kansas be inspected by members of the State Board of Health, they dividing themselves into parties for such purpose. Accordingly the following assignments were agreed upon:

Wichita, Doctors Scott, Bentley and Carlile; Hutchinson, Doctors Bentley and Scott; Topeka, Doctors Locke, Alexander and Golden; St. Joseph, Doctor Alexander; Pittsburg, Doctors Carver and Mills, and Mr. Welch; Fort Scott, Doctor Mills and Mr. Welch; Kansas City, Doctors Lerrigo and Crumbine, Professor Bailey and Mr. Deacon.

It was further agreed that inspection be made at actual cost of transportation and hotel bill.

No further business appearing before the Board, upon motion adjournment was taken.

The following bills were audited and allowed:

B. J. Alexander	$12 50
C. H. Lerrigo	5 00
E. P. Mills	9 70
L. A. Golden	35 30
J. B. Carver	23 00
G. E. Locke	9 10
A. B. Scott	38 00
C. D. Welch	24 00
J. B. Carlile	25 35
Total	$181 95
E. H. S. Bailey	2 65
Total	$184 60

SECRETARY'S REPORT.

Mr. President and Members of the Board:

GENTLEMEN—In pursuance to the order of the Board given at the annual meeting, the secretary, on July 3, went to El Dorado, where he met the attorney for the Board, Mr. Welch, and took up the matter of delinquent county health officer with the board of county commissioners, then in session. The county health officer was represented by an attorney who presented his side of the case to the Board, Mr. Welch and the secretary presenting the Board of Health's case. After the case was presented it seemed so manifest to the attorney for the county health officer that he had been in violation of the law and contempt of the Board that he advised the doctor to resign his office, which he did. The Butler county board of health immediately appointed Dr. C. E. Hunt to succeed him, and thus was adjusted in an amicable manner what threatened to be a legal battle of considerable and acrimonious proportions. Mr. Welch went from there to Anderson county, to meet with the county authorities concerning the delinquent county health officer of that county, and will make his report to the Board direct. The secretary being ill was unable to accompany the attorney to this point, and returned home. It is with pleasure that I am able to inform the Board that the returns from Butler county are reasonably complete, and the present county health officer is doing his utmost to organize the sanitary forces and obey the instructions, rules and regulations of the Board. From a reply received from the county health officer of Rooks county, the third delinquent health officer, it is evident that the attorney's representation to the doctor has had the desired effect, and he has promised to comply with the rules and regulations of the Board hereafter, and has thus far fulfilled his promise.

On July 14, in response to a telegram from the chairman of the county board of health of Sumner county, I went to Wellington to inspect a slaughter-house. The result of that inspection is contained in the letter submitted to the Board upon my return, which is as follows:

"TOPEKA, July 18, 1906.

"*Board of County Commissioners, Wellington, Kan.:*

"GENTLEMEN—In compliance with your request I visited and inspected the slaughter-house owned and operated by Garland & Knowles, of your city. Words fail me to describe the filthy and unsanitary conditions found there. Evidently this slaughter-house had been in constant use for a number of years, and the appearance in and about it would seem to indicate that no effort had been made toward cleaning it or keeping it in even a fairly sanitary condition. Blood and offal dried were upon the floors and the sides of the building—probably the accumulation of years. Underneath the floors was a reeking, putrifying mass of blood and offal, which was open to a large number of pigs, kept in the enclosure surrounding the house. On the side hill below the slaughter-house, in which intestinal contents, stomachs and other internal viscera of the slaughtered animals were dumped, were a number of pools or depressions filled with the same decaying, pestilential mass of animal and organic material.

"The odor and stench was well-nigh intolerable, and with it all myriads of flies and other insects feasting alternately upon this putrefying, decaying mass, and then upon the freshly slaughtered animals.

"Near by was discovered the remains and carcasses of a large number of animals which I was told were cattle hauled from the Santa Fe stockyards and fed to these hogs. It was not disclosed from what these animals died; some probably from injury while in transit, and others possibly from various diseases. These carcasses were alive with maggots and other evidences of rapid and intense putrefactive changes, but were readily devoured and eaten by the hogs. It was admitted by the butcher in charge of the slaughter-house that these hogs were slaughtered and sold to the citizens of your city and community.

"It cannot be possible that hogs fed upon rotten, decaying flesh and vermin, wallowing in great pools of blood and decaying intestinal contents and internal viscera could be very wholesome meat. Indeed, from the condition of the passages of these hogs it would seem that the entire intestinal tract was in a chronic inflammatory state, which, together with the diet of decomposed animal matter, would produce, in my judgment, a flesh that would be entirely unfit for use.

"Because of the conditions found, as briefly related above, I have to order that you cause the abatement of this slaughter-house under section 2325 of the General Statutes of 1901, and that the owners of the same be made to comply with rule 9 of the Board's rules, which indicate the way and manner in which a slaughter-house must be kept. You should also prevent the sale of any more of this unwholesome product, which in my judgment can be done under section 2331, until such time as the animals have been removed from the present surroundings and kept upon proper feed for at least several months.

"I desire to commend your honorable Board for the initial action already taken in this matter, and for your pledge made to me while there that a thorough inspection would be made of all the slaughter-houses in your county. Such inspection should be made at regular intervals, at least twice a year, preferably during the hot season, in order that your citizens may be protected from contaminated meat products.

Very truly yours, S. J. CRUMBINE, *Secretary.*"

The recommendations to the board have been carried out. All the slaughter-houses in the county have been inspected and unsanitary conditions rectified. Testimony taken before the local board of health, eliciting information of the use of preservatives by the local butchers and unsanitary surroundings, has resulted in a general and widespread clean-up. It is also gratifying to note that the city boards of health of Wellington and Caldwell have succeeded in abolishing the practice of sidewalk displays of fruits and vegetables, until it can be said that the local food supply of Sumner county is probably open to the least suspicion of contamination of any county in the state. The Sumner county board of health are to be highly commended for the diligence and perseverance they exercise in this local pure food campaign.

The revelations made at this point determined me to carry the investigation throughout the state, therefore the following order was issued, which was contained in the July *Bulletin:*

"A recent inspection of a country slaughter-house has disclosed a most revolting and unsanitary condition. There was no evidence to indicate that the slaughter-house was cleaned after the animals were butchered, or ever had been. The offal was allowed to accumulate and decompose underneath and around the building, and carcasses of cattle dying in stock-yards were hauled to the enclosure surrounding the building and fed to the hogs contained therein, and flies and insects swarmed in innumerable numbers at will and pleasure, inside and outside.

"This investigation has suggested the necessity of an inspection of all slaughter-houses in the state, and county health officers are hereby ordered to make an investigation of each and every slaughter-house, and where found to be unsanitary, and not complying with rule 9 as laid down in the Board's rules, and to which your attention is directed, you should immediately take such steps as seem necessary in each individual case.

"Your attention is also called to section 2352 of the General Statutes of 1901, which law provides that slaughter-houses shall be kept clean, and imposes a fine and penalty for violation of such act. It is suggested that slaughter-houses be inspected at least semi-annually, perferably of course during the hot season. Windows and doors should be screened to keep flies off the butchered products until they can be removed to the refrigerators. The consumer is not only interested in having the meat uncontaminated, but clean and screened slaughter-houses would be a distinct advantage to the proprietors themselves in preventing tainted and decomposed meat, and loss resulting thereby. It is hoped that county health officers will immediately take up this inspection."

It must be said that this order has met with a hearty response, as has been noted from correspondence with county health officers on the subject and comments in county papers. Some butchers protest against the ruling of the Board preventing the feeding of fresh offal to hogs. That is a matter that might well engage the attention of the Board at this time, as to whether they desire to stand upon the rule as now formulated, or permit such practice.

It can be truthfully said that the promulgation of the new pure food rules by the Board at its last meeting has created the most widespread discussion and made the most profound impression among the people of the state, including merchants, manufacturers, retail dealers and consumers, of any one thing that the State Board of Health has ever done in its history. On July 13 certified copies of the pure food rules adopted by the Board and under the seal of the Board were sent to every packing-house, food manufacturer and wholesale grocer or jobber in the state of Kansas whose name and address we could find. These rules were accompanied by the following letter:

"TOPEKA, July 13, 1906.

"GENTLEMEN—Enclosed find copy of the rules governing the manufacture and production of food products in Kansas, which were adopted by the State Board of Health in annual session June 21, 1906. These rules are based in each and every instance on statutory law, and an opinion from the attorney-general assures us of their legality and the Board's authority to enforce such requirements. These rules will be in force and effect after their publication in the official organ of the Board—the *Bulletin* of the Kansas State Board of Health—and will appear in such publication in our next issue—the July number.

"We trust to have your hearty cooperation in the requirements set forth in these rules. Violations of the rules, as may be disclosed by future analyses of food products, cannot be overlooked.

Very truly yours, KANSAS STATE BOARD OF HEALTH,
S. J. CRUMBINE, *Secretary.*"

Such rules have been gladly welcomed and received by the people in general, but in the case of some manufacturers they have found considerable fault and complaint with certain provisions. The secretary has had numerous conferences with men of affairs, including representatives of the great packing-houses, wholesale grocers and jobbers, traveling salesmen, and the ordinary, common, every-day people—the consumers. Indeed, his time has been very largely occupied since the last meeting of the Board with this all-consuming problem. The mails have been exceedingly heavy in making requests for copies of the rules and our law, inquiries concerning interpretation of rules, submission of formulas and labels, and a multitude of details which have gone to make up an altogether onerous work of this food campaign. Taken as a whole, however, I am glad to say that there has been a willingness on the part of the wholesalers and retailers to submit to the provisions of the rules cheerfully, only requesting that sufficient time be allowed them to dispose of such goods as they had on hand.

On Friday, July 20, in accordance with an agreement reached through Mr. Hunter, representing the Swift Packing Company, and the secretary, a meeting was had of the packing interests of Kansas, in which the majority of the interests were represented, including the Wolff establishment of Topeka. At this meeting it was agreed as a general proposition to comply with the Board's rules and regulations, and that on Monday following, July 23, they would begin putting up the Kansas compound meat products in compliance therewith. The following Wednesday it was my good fortune to visit the Swift packing plant at Kansas City, and I there discovered to my gratification certain tiers or sections of meat products labeled "Kansas," and upon inspection I found these products to be free from coloring matter and preservatives. It was with no little sense of pride that I became aware of the Board's victory in what I had at one time feared would be a doubtful campaign.

Since the department began its campaign for pure food, in September, 1905, it has been our desire to make some inquiries concerning the supposedly large adulteration of drugs on sale in our retail drug-stores throughout the state, but not having any ways or means for the accomplishment of such purpose, it was thought that we would have to wait until the meeting of the next legislature.

During the early summer, while visiting the State University, in a conference with Professor Bailey, it was my good fortune to meet Professor Sayre, dean of the school of pharmacy, and at that time the matter of drug analysis was discussed. Later correspondence resulted in a personal conference at Topeka whereby it was arranged by the kindness of Professor Sayre that he would undertake the analysis, without charge, of such drugs as would be sent to him. In accordance with this arrangement sixteen samples of drugs from five different cities were sent—from Topeka, Kansas City, Fort Scott, Olathe and Lawrence, and the analysis of same was published in the July *Bulletin*, which is hereby made a part of this report. This department certainly owes a debt of gratitude to Professor Sayre for his important part in uncovering frauds and adulterations in drugs. Your attention is particularly called to the analysis of a nostrum known as "Vesitone," which is responsible for the death of a child at Ellinwood. This analysis showed that it contained a sufficient quantity of strychnia to occasion the death of the child after it had taken seven or eight tablets at one time. It is hoped that at our next legislature the department of pharmacy may be included in the Board's armamentarium in the uncovering of frauds and adulterations.

In accordance with the suggestion of the secretary at the last quarterly meeting, which met with the Board's approval, the preliminary steps for the tuberculosis campaign have been taken. Following is a copy of a letter and blanks sent to every physician in the state of Kansas, which letter is self-explanatory of the scope and work of the campaign:

"TOPEKA, September 1, 1906.

"DEAR DOCTOR—At the annual meeting, in June, the State Board of Health ordered the secretary to undertake a census of all tubercular cases in Kansas. It is thought that such a tabulation of cases will be productive of good in the general campaign now on against this dread disease, and furnish data for an intelligent understanding of the scope of the work to be accomplished and specific information for direct and personal application of proposed methods.

"The scope and methods may be briefly outlined as follows: First, every physician in the state will receive a copy of this letter, with enclosed blanks, with the request that each case of tuberculosis under his treatment, or within his knowledge and not under the care of any physician, be reported, filling in the data called for as completely as possible. Second, that all suspected cases be thoroughly examined, using the state laboratory, if desired, for the examination of sputum. Such examination will be free of charge. Mailing tubes can be had at repositories for that purpose. Third, a list of the names and addresses of all those dying from pulmonary tuberculosis during the past year will be mailed to each county and municipal health officer, with the request to make inquiry and inspection as to whether or not the proper sanitary precautions were taken after the termination of each case, such as fumigation, etc.

"It is proposed, then, to put into the hands of each case reported, including suspected cases, and in each family where a fatal case has occurred during the past year, a pamphlet containing information along the lines of prevention and hygiene. This pamphlet will be compiled largely after the one just issued by the United States government by a committee of three appointed by the president, and which included the surgeons-general of the army, navy, and marine-hospital service.

"It is to be understood that the information obtained is to be used only in the manner above indicated. Physicians who for any reason desire the pamphlets withheld or any who would prefer to review them before giving them in person to patients will please so indicate, and such instructions will be scrupulously observed.

"May we not have your hearty cooperation in this first organized effort by Kansas in the fight against the 'great white plague'? Surely it is worth the little of your time that it will take. It is confidently hoped that, with the definite location of the points of infection, both of persons and places, which will enable us to apply appropriate preventive measures, and the early diagnosis of incipient cases by a careful examination of all suspects by yourself, much immediate good may be done and a forward step taken along the lines of prevention, which must be the final solution of this great problem.

"Stamped envelope inclosed for returns, which should be made at the earliest possible date. Very truly yours,

KANSAS STATE BOARD OF HEALTH.
S. J. CRUMBINE, *Secretary.*"

COPY OF BLANK.

"......................County.
Name...
Residence..
Age ....; Sex............. ....; Occupation........... ....
Married or single..............; Number of members in family............
What is probable source of infection?.......................................
Condition of surroundings...
Stage and progress of disease..
Returned by Dr..
Post-office..
Remarks..."

In addition to this, the following letter has been sent to each county health officer where assessors made returns of deaths from tuberculosis during the past year:

"TOPEKA, September 1, 1906.

"DEAR DOCTOR—In looking over the assessors' returns from your county for the year ending March 1, 1906, I find that the following persons have been reported as having died of tuberculosis: (Names and addresses.)

"This information is sent you that you may check it over and determine whether or not these places have been effectively and thoroughly fumigated, and such other preventive measures taken as to insure the healthfulness of those now living in the houses where these cases occurred. This suggestion is also made as a part of the general campaign against the 'great white plague.'

"Such places as have not been thoroughly and effectively cleaned up should receive your immediate attention, and I am sure your county board of health will see the necessity of such action and heartily cooperate with you in this very important matter.

"It is further suggested that a critical examination of all the members of the family be made for the purpose of ascertaining if there are any incipient cases among them, for which purpose you are invited to use the state laboratory for the examination of specimens of sputum free of charge. This, together with a critical examination, should determine the matter, and in many instances no doubt be the means of an early diagnosis, which as you know is so very important.

"I trust you will take immediate steps for the accomplishment of this purpose, and advise me fully as to the names and number of places disinfected, and the names and number of suspected cases found. Pamphlets along the line of prevention and hygiene, for distribution, will be mailed upon application. Surely this movement is worthy of your hearty cooperation, as prevention must be the final solution of this momentous problem. I am convinced that the time necessary for the accomplishment of this order will be the best and most valuable time you can contribute to the cause of humanity. Very truly yours, S. J. CRUMBINE, *Secretary.*"

I am sure the Board will be gratified to know that the campaign has been favorably received by the majority of the physicians of the state. Numerous letters of a congratulatory tone have been received, and a large number of cases thus far reported, to whom pamphlets on prevention have been sent. It is also gratifying to note that a large number of requests from private citizens, both within and without the state, have been received. It is our intention to continue this work along the line of prevention, which must be the final solution of this momentous problem. Incidentally, it might be added that valuable information is being collected as a proof of the necessity for a state sanatorium for incipient cases. Certainly the number of cases thus far reported must appeal to the people as a plea for help, which can be better and more scientifically given in a sanatorium with proper surroundings than in any other known method at the present time.

On August 16 about eighteen of the wholesale grocers of Kansas met at the office of the secretary for the purpose of a conference on the provisions of the pure food law and the rules adopted by the Board at the June meeting, and it is with much gratification I have to report that without exception the wholesale grocers of Kansas are heartily in favor of the enforcement of the pure food laws of the state, and gave me their personal assurance that from that moment all orders given by them to food manufacturers and jobbers for food supplies would be made contingent on their compliance with the rules recently adopted by the Board. They made but two requests, one that the Board refrain from gathering samples of groceries or grocery products for food analysis until after January 1, 1907. This request was made in order that the products then on the shelves of both the wholesaler and retailer might be disposed of, or in as large measure as possible. I therefore recommend that their request be complied with as a matter of fairness and justness to them, particularly considering their personal assurance of compliance with the law from this time forward.

The second request was that a committee representing them might meet with the Board at this time for the purpose of discussing some of the provisions of the rules, which in their judgment should meet with amendment, and I am sure the Board will be more than pleased to meet personally the representatives of this great industry of Kansas.

Numerous inquiries have been made concerning the Board's interpretation of certain rules, which interpretations as given I hereby present to the Board for their consideration. These interpretations have been made in a great many instances on some of the rules, but a copy of same will suffice as indicating the secretary's opinion concerning them.

First, as to rule 1. It means the prohibition of artificial coloring matter not only in the meat itself, but in the casings of meat products as well.

Rule 2 means the prohibition of antiseptic preservatives unless they are properly tagged or labeled. Antiseptic or chemical preservatives, as used in this rule, does not include sugar, salt, vinegar, saltpetre in minimum quanties, alcohol, or smoke.

Sulfurous acid as a bleach for dried fruit is, as I understand it, almost if not quite a commercial necessity. It is therefore my opinion that the Board will find no objection to its use.

As to rule 5, packages that are sold by the package, not claiming any weight or measure, that is, not sold or billed to the retailer or sold to the consumer as containing a certain weight or measure, are not comprehended in this rule. The label on a package simply known as a ten- or fifteen-cent package, for illustration, need not make a statement of weight or measure.

Rule 6 requires that the true grade of the class of the goods must be stated. This would apply to both lemon and vanilla extracts (and other extracts) that are below the standard of requirements of the United States Pharmacopœia. To be specific, I would say that lemon extract containing only a small amount of oil of lemon might properly be labeled "lemon flavor," if it states in addition thereto, for illustration, "composed of oil of lemon, water, and alcohol," the quantity expressed in parts or per cent., and if colored artificially so designated, and such coloring must be harmless.

Rule 13.—In the matter of starch fillers it was the intention of the rule that this word starch should comprehend the use of any kind of flour, the word being used in the broad and general sense, and therefore it would be necessary to indicate the presence of such foreign flour or other flours as are in sausages. In making such indication it is not necessary to use the word starch. If it is an especially prepared flour, baked corn-flour for instance, such name could be designated.

Since the Board meeting in June the matter of starch fillers in meat products has been given a great deal of thought and investigation, and your secretary has been convinced that a small amount of starch in the shape of certain prepared flours is an absolute necessity in ground-meat products to act as a binder, and also in the pork sausages to absorb the surplus amount of grease. A request was made of the Kansas City packers, through Mr. Hunter, of the Swift Company, also the Wolff Company, of Topeka, to make some experiments as to the minimum amount of starch that could be used as a binder, and upon such recommendation a rule could be submitted to the Board, permitting such a minimum amount to be used without its being indicated on the label, but that starch in excess of this minimum amount should be indicated on the label, stating the amount so used, and failure to so do would be evidence of fraudulent adulteration.

I would recommend that rule 5 be amended so as to be more clear and concise as to its meaning, such amendment to be made after the conference with the wholesale grocers.

Rule 2 might also be amended by the addition of the exemption of preservatives such as salt, sugar, vinegar, minimum amount of saltpetre, alcohol and smoke.

Rule 14 should be amended so as to state more clearly its purpose and intention.

I beg leave also to offer the following rule in lieu of rule 10:

> "Coffee must be pure, free from chicory, free from any wash or covering which will conceal defective grains and which makes it possible to finish and polish coffee, giving same an appearance that deceives as to its real value. Roast coffee must be sold to the trade under what is termed a natural roast."

I would suggest that rule 18 be amended to read as follows:

> "All other mixtures, compounds, powders or products used as foods, or in the preparation of food products or drinks, must be accurately labeled as to their composition, and must state the kind and amount of preservative used, if any is used."

I would also recommend that a rule be adopted prohibiting the sale of poultry, game or fish that has been kept in cold storage with the entrails and gizzard undrawn. A number of states have recently passed laws prohibiting the cold storing of fowls and fish undrawn, and it is a matter of universal knowledge that many cases of ptomaine poisoning have occurred as a result of eating such cold storage meat products. The argument that game or fowls keep better with the entrails and gizzard unremoved is absolutely fallacious and unfounded in fact. Investigators have proven time and again that putrefactive changes continue in the intestinal contents or contents of the gizzard, and that indeed it does not entirely cease with the freezing of the fowls; that gases and ptomaines are readily absorbed by the surrounding tissues and are a grave danger to those eating such products as a food. It is quite as logical to assume that cattle, hogs, calves, sheep and goats should be put in cold storage with the mass of intestinal contents unremoved as it is in the case of game, fish and fowls. This is a matter of utmost importance to the life and health of the people of this state, and particularly to the traveling public, as it seems to be an almost universal practice for dining-cars and hotels, during certain seasons of the year at least, to use cold storage products. I therefore recommend the adoption of the following rule:

"The sale at retail within the state of Kansas, for human food, of any domestic or wild fowl, game or fish that has been kept in cold storage with their entrails, crops and other offensive parts undrawn, is prohibited. The service as food within the state of Kansas, of any such domestic or wild fowl, game or fish is also prohibited."

Some time ago, in reviewing the work of the Ohio state board of health, my attention was attracted to experiments being conducted by the United States Geological Survey cooperating with the State Board of Health in the collection of industrial wastes that had been formerly polluting the streams, such wastes being created into profitable by-products. About this time, also, I noticed that a bill had been introduced into the Iowa legislature asking for a certain sum of money to cooperate with the federal government in work similar to that being done in Ohio. The rejection by our last legislature of a bill placing the natural water supplies of the state of Kansas under the sanitary control of this Board seemed to place us in a hopeless condition in the matter of any regulation of authority to control or even advise municipalities as to water supplies, and to be without means governing the necessary information in cases of suspected pollution or threatened epidemics.

I therefore addressed a letter to the United States Geological Survey, making inquiry as to the scope and nature of the work, what would have to be done by this state in order to obtain cooperation in the work desired to be done as outlined by the Iowa bill. This correspondence has finally led to an agreement between myself and acting chief hydrographer of the United States department, M. O. Leighton, for a sanitary survey of the water supply of Kansas. Being very certain that this Board could have no objection, but would gladly give their consent to any measure that would be the means of giving us this much-desired information, and as time seemed to be an important element, I immediately, upon the approval of the governor and the chancellor of the University, signed the following agreement:

"THIS AGREEMENT, Made and entered into this —— day of ————, 1906, between Charles D. Walcott, director, for and on behalf of the United States Geological Survey, of the first part, and Dr. S. J. Crumbine, secretary, for and on behalf of the State Board of Health of Kansas, of the second part:

"WITNESSETH: It is hereby agreed that there shall be conducted in the state of Kansas a cooperative survey to determine, as hereinafter provided, the character, healthfulness and industrial applicability of the waters of said state during a period of —— months from the —— day of ———, 1906, and that the parties hereunto subscribed shall contribute to the support of such survey, as follows: By the party of the first part, $1500; by the party of the second part, $1500; total, $3000.

"1. That all work performed under this cooperative agreement shall be confined to the determination of the mineral and organic constituents in the surface and ground waters of said state, their applicability for use in industrial and domestic purposes, and their pollution by sewage and industrial waste.

"2. That the work performed under this cooperative agreement shall be under the joint direction of Mr. M. O. Leighton, acting chief hydrographer, for the party of the first part, and Dr. S. J. Crumbine, secretary, for the party of the second part, subject to the approval of the parties hereunto subscribed.

"3. That a member of the staff of the United States Geological Survey, duly classified by the United States Civil Service Commission, shall be designated to carry on a part of the work provided in this agreement, the nature of which shall be determined by the designated representatives of both parties hereto, and that said official shall be paid the sum of $116.66 for each month of such service.

"4. That in case it shall be found previous to the close of the term of this agreement that the expenses incurred will be greater than the total amount of the fund provided, retrenchment shall be made by suspension of work according to the decision of the representatives of both parties hereto.

"5. That in case the expenses of the work outlined in this agreement should not be as great as the fund provided, adjustment shall be made in the last month of the term of the contract by paying salaries and expenses from the various allotments in such a way that the expenditures of each party hereunto subscribed shall be an equal proportion of the amount contributed by each to the fund.

"6. And, be it understood and agreed, that the original notes and records of the work performed under this agreement shall be the property of the party of the first part, but the party of the second part shall have the right to use any of the results for the special purposes for which said party is credited, reserving only the right of prior publication of the results as a whole to the party of the first part; in the publication of such reports of the investigations by the party of the first part, the relationship of each party to the report shall be clearly stated, and the party of the second part shall be provided with an equitable number of copies to be distributed according to the provisions of any statutes by which either party may be governed; provided, that the party of the second part shall be relieved from the obligations herein assumed in case the legislature of the state of Kansas, at its next session, shall fail to provide authority and appropriate money for the investigations herein provided; and provided further, that until such time as said legislature shall convene and provide such moneys, all the expenses of the investigation shall be paid from the allotment of the party of the first part, adjustment to be made by equal payment from the allotment of the party of the second part after the same has been made available.

"IN TESTIMONY WHEREOF, We have hereunto set our hands the date and year first herein written.

CHARLES D. WALCOTT,
Director United States Geological Survey,
For and on behalf of the party of the first part.

S. J. CRUMBINE,
Secretary State Board of Health of Kansas,
For and on behalf of the party of the second part."

It will be noticed that this is a most liberal contract, one which does not bind the state to any financial consideration if the legislature fails to make the appropriation asked for. Doctor Strong, chancellor of the University, assured me during a personal conference I had with him last week, that the laboratories of the University would be open for the work of the survey as indicated by the following letter received yesterday:

"LAWRENCE, September 12, 1906.
"*Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:*

"MY DEAR DOCTOR CRUMBINE—In accordance with our agreement when you were at the University about a week ago, we have arranged with Professor Bushong to remain at the University and have given him assistance in order that he may do all of the work made necessary by the water survey of the natural waters of Kansas. We are also fitting up one of the laboratory rooms at the chemistry building at considerable expense with new apparatus, tables and equipment, for the use of the survey. We believe that you will find at your disposal thorough facilities for prosecuting the work. The laboratory for food analysis was arranged last year, and will continue to be used for that purpose.

"With best wishes I am, Very truly yours, FRANK STRONG."

The purpose of this survey is clearly set forth in the bill which will be introduced in the legislature, which bill is as follows:

"The State Board of Health is hereby authorized to act with the United States Geological Survey in determining the sanitary and other conditions and nature of the natural water supplies of the state of Kansas, such water survey to have for its purpose, (1) to determine the nature and condition of the unpolluted and natural water supply of the state; (2) to determine to what extent the natural waters are being contaminated by sewage from cities; (3) to determine to what extent the natural waters are being polluted by industrial wastes, such as come from glucose factories, creameries, smelters, refineries, oil-wells, and such other sources which produce pollution, and in what way these wastes might be utilized for beneficial purposes; (4) to investigate the water-borne diseases and assist in determining the best source of water supply.

"There is hereby appropriated for the purpose of carrying out the provisions of this act the sum of three thousand dollars, provided that an equal sum can be obtained by and through the United States Geological Survey for this work. The State Board of Health is hereby empowered and instructed to make such rules and regulations in conjunction with the United States Geological Survey as may be necessary to carry into effect the provisions of this act. All laboratory work necessary to be done within the meaning of this act shall be done at the University of Kansas."

With the survey made by experts of the federal government, and chemical and bacteriological work done by trained men of our State University, and with half the bills paid by Uncle Sam, it is surely a rare opportunity for the state of Kansas to have this urgently needed work done in a most efficient and thorough manner. Surely the 674 mounds made in our state during the past year of victims of typhoid fever is a most pathetic appeal and unanswerable argument for the legislature to make haste in making the necessary appropriation, that the work may be done with the greatest expedition possible. Kansas is dotted with towns that are now about large enough to be equipped with city water-supply and sewerage systems, so that the information gathered from this sanitary survey will be of the utmost value and importance to these contemplated improvements. Naturally such advanced scientific work must be followed by the legislature giving ample authority to some department of the state to have sanitary jurisdiction over the installation of water and sewerage systems.

In the latter part of August a number of cases of smallpox occurred in St. Francis. The county health officer placed the cases under quarantine, but one gentleman, a Mr. J. L. Winninger, refused to remain under quarantine. Before the county health officer had notified me of the existence of these cases, two telegrams were received from Mr. Winninger requesting my immediate presence in St. Francis. Not knowing the existing circumstances or the responsibility of the person, but judging him to be a local merchant and a man of importance, I telegraphed Doctor Golden to visit this place and investigate, when but a few minutes after sending the telegram notice was received from the county health officer that this was the man who was violating the quarantine. I then notified Doctor Golden not to go, and telegraphed Doctor Lamb, the county health officer, to place the man under arrest, which he did. Information received since that time conveys the cheerful news that Mr. Winninger voluntarily paid a fine of twenty-five dollars and costs.

The general health of the people throughout the state of Kansas has been exceptionally good for this season of the year. Less than the usual number of typhoid cases have been reported, and other infectious and contagious diseases, with the exception of tuberculosis, have at least not been on the increase. With abundant harvests both of grain and fruits, with the cattle on a thousand hills fattening on the luscious grass, the result of abundant and timely rains, with the banks full and running over—the deposits of Kansas people, and the condition of the public health never better than at the present time, surely the people have cause for gratitude and thankfulness.

The order for fumigation of schoolhouses throughout the state and for the inspection of slaughter-houses by boards of health has been quite generally observed, I am pleased to say, so that altogether the sanitary condition of the state is better and the sanitary forces more thoroughly organized than at any time in the state's history.

Minutes Second Quarterly Meeting, 1906.

The State Board of Health met in quarterly session in the office of the secretary, at the state-house, at 1:30 P. M., December 20, 1906. All the members of the Board were present. All the members of the advisory board were present excepting Professor Marvin.

The order of business was taken up after roll-call, and the minutes of the last meeting read and approved and ordered placed on file.

The reports of the secretary and treasurer of the embalmers' examining committee were then read and, upon motion, were ordered placed on file. They are as follows:

OLATHE, KAN., December 15, 1906.

To the Officers and Members of the State Board of Health:

As secretary of the embalmers' examining committee, I have to report that we have held two examinations since my last report, in June of this year; that Doctor Carlile was present at one examination, and Doctor Mills at the other.

Examined	66
Reexamined	15
Granted licenses on certificates from other states	11
Granted licenses to Oklahoma examiners gratuitously	3
Total certificates granted	83
Total certificates granted in one year	104

Received from Wichita examination	$300 00
Received from renewal fees	673 00
Received from Atchison examination	175 00
Total	$1,148 00
Paid to Treasurer Maltby	1,124 75
Balance on hand	$23 25

I would recommend that you appoint a committee from your honorable body to attend our meetings. If one or two persons give such things especial attention, it is reasonable that such persons will become more proficient in the work than eight or ten persons, in a general way, could become. I would urgently recommend that each of you do all in your power towards procuring legislation in our behalf at the coming session of the legislature. At the last session of state and provincial boards of health and embalmers' examining boards, it was recommended that erysipelas be placed under shipping rule No. 2, instead of rule No. 3 as it now is.

Respectfully submitted. T. J. KEAN.

Following is the report of the treasurer:

MCPHERSON, KAN., December 18, 1906.

To the Honorable State Board of Health, Topeka, Kan.:

GENTLEMEN—As treasurer of the embalmers' examining committee, I beg to make and present my semiannual report:

Balance cash on hand at last report, in June	$156 54
Cash received from Secretary T. J. Kean during term,	1,124 75
Total	$1,281 29
Paid out on all warrants to date	978 19
Leaving a balance cash on hand of	$303 10

Very respectfully, D. R. MALTBY, *Treasurer.*

P. S.—I believe through your cooperation and assistance that there is a great good being done all through our beautiful state, as all our meetings demonstrate to us. It is most surprising to see the interest the oncoming undertakers take in the examinations. I also think the traveling public, in a great measure, appreciate the efforts being put forth for their protection. It is once in a while that it is necessary to call some one down for a little carelessness, but, as a whole, there is a great work and a great benefit being accomplished. May the good work go on until all have been enrolled.

D. R. M.

The recommendation of the secretary that a standing committee of the Board be appointed to attend the meetings of the embalmers' examining committee was by motion approved, and the president authorized to name such committee.

In accordance with the request made at the last meeting of the provincial boards of health and embalmers' examining boards that the word erysipelas be placed under shipping rule No. 2 instead of rule No. 3, a motion was made changing the wording to apply under rule No. 2 instead of rule No. 3, which motion, being seconded, was unanimously carried.

A communication was then read from the secretary of the National Funeral Directors' Association, which communication was ordered placed on file. The substance of the communication was to the effect that a standard disinfectant had not been adopted as yet, and therefore that such action by this Board would be premature.

Upon motion, the Board elected Prof. L. E. Sayre, dean of the School of Pharmacy of the State University, and Prof. J. T. Willard, chemist of the State Agricultural College, as advisory members of the Board.

The application for the interment at Muscotah, Kan., of the body of Stelle Cortelyou, who died of yellow fever, to be shipped from Panama, was presented, and as death had occurred within less than two years, the application could not be granted under our present rules. It was pointed out that the danger in transporting bodies that had died of yellow fever was *nil*, therefore a motion to amend our rules by striking out the words "yellow fever" was made and on vote was adopted, whereupon the application for interment of the body of Stelle Cortelyou in the cemetery at Muscotah was granted.

The application for the disinterment of the body of Nellie Fields, who died of scarlet fever on December 28, 1904, to be shipped from Stafford county, Kansas, to Scioto county, Ohio, was granted, to date from December 28, 1906.

The secretary then read his report, which upon motion was received and ordered placed on file.

This report contained an official letter from Chancellor Strong, offering the use of the laboratories of the University for the scientific work of the Board, and upon motion the thanks of the Board were tendered to the chancellor for his generous thought and consideration.

The report of the bacteriologist was then read and ordered placed on file.

There being quite a number of wholesale and retail grocers present, and representatives of packing-house interests, including Doctor De Wolff, of the federal government service, an opportunity was given them for discussing certain features of the pure food bill. These remarks were interesting and instructive, conveying to the Board the impression that the wholesale grocery interests were in hearty accord with the movement of the Board in the inauguration of new pure food legislation, which should be along the lines of the national law in so far as our local conditions would permit. These informal talks were followed by an address by Professor Bailey on coloring matter and adulterations.

Doctor Mills made the motion "that it is the sense of this Board that pending state legislation the rules and regulations of the national food and drugs law and the Bureau of Animal Industry govern this Board so far as they are applicable," which motion was carried.

In accordance with the motion made at the September meeting that the members of this Board visit the various packing-houses in the state, the following committees were appointed to visit the packing-houses: Doctors Bentley, Scott and Carlile, Wichita; Doctors Scott and Bentley, Hutchinson; Doctors Locke, Alexander and Golden, Topeka; Doctors Carver and Mills and Mr. Welch, Pittsburg; Doctor Mills and Mr. Welch, Fort Scott; Doctors Lerrigo and Crumbine, Professor Bailey and Mr. Deacon, Kansas City; Doctor Alexander, St. Joseph; Doctors Carver and Mills, Coffeyville.

Accordingly the reports of the committees were presented, which are as follows:

INSPECTION OF OLATHE PACKING PLANT.

This is a small plant engaged chiefly in pork packing and shipping a great part of their product to Kansas City, Mo. A federal inspector has just been placed in charge. The plant slaughters from fourteen to twenty hogs daily at a slaughter-house about one mile from town. The building is small, but fairly clean. The floor is cement, except beneath a platform at the side, and the proprietors agree to cement this at once. The tables are scrubbed daily. Disposal of offal is made by throwing it on the ground a couple of hundred yards from the slaughter-house and afterwards burying it. Proprietors agree to allow no accumulation. The slaughtered animals are hauled direct from the slaughter-house into town to the packing-house, which is in the rear of a retail butcher shop conducted by the same proprietors. There are four or five employees, who are required to wear linen coats and aprons and be clean in person. Good accommodations for cleaning up are provided. The tables are scrubbed after each clearance and some have a metal cover. No preservative or coloring is used. There is a basement with cement floor sometimes used for storage, but at present empty. The proprietors of the plant are in apparent sympathy with the efforts of the Board to promote sanitary management, and are willing to follow requirements.

C. H. LERRIGO.
E. P. MILLS.

INSPECTION OF PACKING-HOUSE AT COFFEYVILLE.

At the request of the Board I inspected the packing-house at Coffeyville. The building is situated one and a half miles northwest of the city. It is a three-story modern brick structure, and is doing business under the name of the Southwestern Packing Company. The capacity of this plant is about thirty beeves and fifty hogs; the average output is about eighteen beeves and twenty-five hogs a day. No canned meats are put up at this plant. The sausage is free from any coloring matter and is not shipped but used for home consumption. They manufacture "lard" and leaf-lard. The leaf-lard is pure lard and is labeled as pure leaf-lard. "Lard" contains lard and ten per cent. of tallow and pork fat and labeled "Lard." They manufacture no compound lard and use no cottonseed-oil in lard products. All utensils used in the different departments were clean and are in a very sanitary condition. The closets, towels and lavatories are all clean and in a satisfactory condition. The walls and partitions are painted to a height of six feet from the floor in order to make it easier to scrub and keep clean. The ventilation and heating are as good as can be had and amply sufficient. They have a good sewer connection from the plant to the Verdigris river, the sewer emptying about one mile below the connection of the city water-supply, thus avoiding any danger of contamination from that source.

About the only suggestion I made was the cement floor for the killing-room and plenty of lime and whitewash about the building. This establishment is only about eight months old and everything is comparatively new and clean. Mr. C. F. Howe, the superintendent, showed me every possible attention and explained everything to my satisfaction, and seemed ready and anxious to conform to all the Board required. J. B. CARVER.

INSPECTION OF PACKING-HOUSES AT FORT SCOTT AND PITTSBURG.

In compliance with the Board's orders I went to southern Kansas the first of the week.

Fort Scott was the first stop, and was, in a way, a mistake, there being no packing-plants there. However, in company with Doctor Carver, I visited the local slaughter-houses and meat-markets and uncovered a lot of work for the local health officer. Two of the plants—Yeagel's and Moore & McCabe's—are situated on the brink of a deep ravine, or draw, which draw empties into a creek, and finds its way to the river, all this way below the intake of Fort Scott's water-supply. Both kill all kinds of stock—hogs, cattle, sheep.

The Yeagel plant is in an old building, and the floor was the only part of it to receive any care. It was clean, but of boards. The offal was thrown down the hill of this ravine into the hog-pen. Hogs do not eat the entrails of other hogs, but will of other stock. But an examination of the dumping-ground revealed the fact that the large colony of crows had done a good job as scavengers. Right here let me say that I think that fit portions of the entrails of freshly killed cattle could be with safety fed the hogs.

A large mass of manure and other offal had accumulated on a platform just below the killing-bed. The report was that this was cleaned up and scattered out every day, but some reason was given why this had not been done the Saturday before. This plant needs a cleaning, whitewashing, and much more care of the premises. The butcher objects to a cement floor; says it will be too slick in the winter, and that cleavers will be dulled on it, and the surface destroyed by the tools used in cutting up the animals.

The other plant is newer and in better shape. The water supply is from dug well near killing-bed, which does not appeal to me.

The Morrow plant is on the bank of the river. From the killing-bed a long chute extends to the water. The blood and waste parts with the intestinal contents go down to feed the fish. This is about twenty miles upstream from Nevada. But why object to so harmless a pollution when just below is the outlet of Fort Scott sewer? The woodwork of this plant is all nicely whitewashed, the floor white and polished, and Colonel Morrow said a cement floor would go in under the killing-bed. All three houses make a line of pork products, but only smoke bacon. None are using preservatives now, but I found "iceine" and "rosaline" in Yeagel's and a stain Zanzibar carbon. All such work is done up town in rear of shop. All make lard, but one grade, and use all the fat in that. All use the open tank method. I recommended a covering of some kind on table where sausage is handled, either zinc or oilcloth, it being impossible to clean cracks of a wooden table. All were glad to see me and all promised to follow out instructions. It was checked up to the local health officer to see that these things were done.

Going on down to Pittsburg, I supplied the saving element to the Bryan party.

There are two plants at that place, Hull & Dillon and Stanton & Lindburg. Hull & Dillon have the larger and older place. In this inspection I followed a trip by the chief inspector under the government and found a most vigorous house-cleaning under way. Toilets, baths, lockers, washing facilities are being installed, and in a cement-floored building. Paint and whitewash were in evidence. The walls had all been scraped, cleaned, and covered. The platforms for meats were being raised from the floor. The septic tank in connection with the sewerage plant was being moved from just under the windows of the sausage-room to a considerable distance away. The water used comes from two driven wells, one 1000 feet deep, the other 800, and seems to be an excellent quality. No preservatives or dyes are being used, nor did I find any about the place. This firm has made two grades of lard—a pure leaf-lard, and lard—in each a small per cent. of beef tallow has been used. Now they are adding a compound to use up the beef fat and will make leaf-lard, lard, and compound, cottonseed-oil, etc., under appropriate labels. This firm is spending some $2000 in this clean-up, and are going to get and use porcelain bath-tubs on wheels in which to place the cut-up meat to convey it to the sausage-rooms and other parts of the plant. They are also planning to get containers in which to empty the intestinal contents and offal from killing-beds, instead of using the floor as now. When that is done, no more will be seen the spectacle witnessed yesterday of the men taking from the floor of the killing-bed intestines for cases and the usable parts of the heads.

At Stanton & Lindburg's the plant is new, a little over a year old, and consequently not much house-cleaning is needed, but they, too, are at it. What was said of other plants is true here also. Their water supply is from the city mains. One thing here struck me as being very good—on each side of the swinging doors has been placed a large piece of zinc. This can be kept clean. The government inspector made no objection to the wooden cutting-tables. I think there is such objection.

The spirit of all these men seems to me to be very good. They want to do things right. The sewage question came up here also. The sewerage is emptied into a creek. This stream is very shallow, and only when a spring freshet comes is it flushed thoroughly. Then where does it go? An attempt is being made to remove the more material part of the sewerage in a kind of septic tank, and this is cleaned once a day.

The bed of this stream has been used as a dump, and is now filled with barrels, tin cans, etc. I advised a clean-up, and would suggest that county health officer, whom I did not see, be asked to go out and see if stream has been cleaned, and have it done if it has not.

Respectfully submitted. EARNEST P. MILLS.

INSPECTION OF PACKING-HOUSE AT TOPEKA.

Pursuant to the request of the Board to inspect the Wolff packing-plant at Topeka, Dr. L. A. Golden and myself visited said plant December 20, 1906. We were very cordially received by Doctor De Wolff, the government inspector, and other officials in charge, and were shown over the various departments of the plant. After having visited the plants at Wichita and Hutchinson and hearing reports from other plants over the state, I must say we were pleased with the general sanitary condition found at this place. More attention seems to have been given to light and ventilation, making it a more comfortable place for the employees to work in. The floors and walls were clean, as well as the trucks and other receptacles that come in contact with the meat product. The employees change clothing on coming into and leaving the building and wear clean clothing while handling the dressed meats. An especial sanitary feature, that I found in no other plant, was a special room that could be closed tight, for the reception of lard products, keeping out the very unsanitary odors from offal vats and other grease tanks that is not used for food products. The lard room was clean and the three different kinds of lard products were labeled according to their composition.

The condition of the killing-room is similar in all packing-plants, and is impossible to be kept what you would call clean, yet this place showed evidence of recent scraping and scrubbing and I suppose, owing to their construction, are kept as clean as their wood material will permit of.

There is one department, however, we could find fault with, and that is the cramped quarters for the detention of suspects, or animals that have been tagged for inspection. The space allotted for this department has a capacity for only ten hogs, and was full the day we were there.

These animals, some tubercular, some choleric or otherwise diseased, were in almost direct contact with a table piled with portions of other hogs intended for food; also, it does not give the inspector room to work to make the proper inspection. We were informed, however, that this evil was expected to be remedied in the near future.

No by-products in the way of canned goods are made in this plant.

This plant makes quite a quantity of mince-meat, and while we saw it being prepared, we could not learn definitely its contents, although it seemed clean and wholesome. They claim about twenty different ingredients, none to cost over ten cents a pound; also a small quantity of preservative—I think one-twentieth of one per cent. of salicylate of soda.

Water-closets are located outside the building. Lavatories, water and towels are placed in these for use of employees on coming out.

Lavatories, with hot and cold water, are distributed throughout each floor of the plant; also clean towels.

Cuspidors are found on the different floors, except on certain floors, or rather rooms, where spitting of tobacco in any form is not tolerated.

One feature we were a little surprised to learn was the fact that "big-jawed" cattle were allowed to be butchered, claiming that this is a local disease or sore and did not affect any other portion of the animal. We were rather loathe to agree in every particular; yet, so long as "Uncle Sam" said it was all right, we did not feel like ordering it stopped. Yet, right here we want to register a strenuous kick against the practice, and ask that the Board give the matter some consideration at their next meeting.

Respectfully submitted. A. B. SCOTT.

INSPECTION OF KANSAS CITY PACKING PLANTS.

Agreeable to instructions from this Board, Dr. S. J. Crumbine, secretary, Prof. E. H. S. Bailey, chemist, and W. J. V. Deacon, statistician, went to Kansas City on September 25, 1906, for the purpose of making an inspection of the packing-houses of that city. During the first day of their inspection they were accompanied by Dr. E. J. Lutz, president of the Kansas City board of health, and the city physician.

In some respects the time chosen was perhaps inopportune, owing to the fact that with one exception every plant visited was undergoing extensive alterations, and making improvements to meet the requirements of the government inspectors, who were on the ground in full force, the inspection in some departments being in full operation, although the law was not effective for a week later. The odor of fresh paint greeted one on every hand, and new work was in constant evidence.

One most radical change was in the toilet-rooms, which in compliance with the federal requirements must be of most modern construction, automatic flushing and the rooms with outside exposures and vestibuled entrance. Large signs are posted requiring employees to wash their hands after leaving the toilet-rooms. To insure compliance therewith wash-basins are outside the toilet-rooms, in plain sight of the foreman. Failure in this regard is punished by dismissal, and we were assured by one of the superintendents that this rule was strictly adhered to.

Floors and tables are carefully washed, both exhaust and live steam, together with an abundance of water, both hot and cold, being used, and a decided effort appears in most cases to keep clean. The tables used for the preparation of food products are, in some cases, of enamel, glass or zinc, but the majority are of wood. The same thing is true of meat-trucks. These latter are perhaps the most reprehensible items, and are, undoubtedly, to be criticised, as even in the best of establishments visited they were far from clean, at least to appearance. This, with the exception of a few of enameled iron, which appear in good shape. The floors are often in bad shape, particularly in the killing departments. Wood will absorb, and we do not think it can be thoroughly cleaned. One packing-house had a floor of brick laid in cement, which appears infinitely better than the wood. The packers all claim to be studying the floor problem, and, no doubt, better results will soon be obtained.

Of the larger packing-houses, the Fowler deserves censure on account of the darkness and poor ventilation. For some unexplained reason, even the few windows were darkened with paint, and I would respectfully recommend that the secretary be instructed to take the matter up with the company and suggest improvements. Darkness and dirt will be found close companions in an establishment of this kind. In this connection I would state that in one of the packing-houses they have created a position of sanitary inspector, whose sole duty it is to visit every nook and corner of the establishment, armed with an electric flashlight, and look for dirt. This position was created to procure cleanliness and to prevent the accumulation of dirt and rubbish in out-of-the-way places.

The attention of the Board is called to the condition of two of the packing-houses inspected, Callahan's and Adler & Co. In both of these places the conditions were filthy in the extreme. No old-fashioned slaughter-house ever presented such a disgusting appearance, and while some minor improvements were being made to meet the requirements of the government inspection, the Board should arrange for another inspection of these plants and take rigorous steps to enforce a general cleaning up, both inside and out, as one cannot expect a clean product from filthy environments.

On the second day the committee had the opportunity of going over the work being done by the government inspectors, in company with Dr. B. E. Eagle, the assistant chief inspector, who fully demonstrated their plans and the uses of the new retaining and condemned rooms, which were being installed. Under this system it is well-nigh impossible for diseased meat to reach the table of the consumer.

All the packers deny the use of preservatives and coloring matter, and none was in evidence except in meat intended for export, which is packed in borax, with the consent of the government. These meats are packed and stored in rooms separate from goods intended for domestic use.

The cold storage of undrawn poultry was discussed with the officials at Armour's and Swift's, but no satisfactory conclusion arrived at.

A visit to the chemical laboratory of one of the establishments revealed the fact that they were testing all the vats for borax, and in some vats in which borax had not been used for six or seven years traces in minimum quantities were still to be found. What better evidence can be found to sustain the suggestion above submitted that wood will and does absorb, and the necessity of replacing wood floors, tables and trucks with non-absorbent material.

One important feature that should be insisted upon by this Board is that the "tank" houses for the manufacture of fertilizers be completely isolated from the buildings where food products are prepared, as the offensive odors from these places should not be permitted to permeate the buildings where food intended for human consumption is being handled. While in many cases the "tank" is isolated, the committee recalls with sensitive notrils at least one building where the "tank" occupied a part, and the quantity of soap and other things that were consumed in an effort to remove from the face, hair and clothing the effect thereof was a caution.

All of which is respectfully submitted.

W. J. V. DEACON, *Statistician.*
E. H. S. BAILEY, *Chemist.*
S. J. CRUMBINE, *Secretary.*

A motion was made and carried that the recommendation by the Kansas City committee be carried out, and the secretary instructed to communicate with the Fowler packing-plants concerning their poor lights and ventilation, and that he be instructed to reinspect the Callahan and Adler packing-plants.

Upon motion, it was ordered that rule No. 13 be amended to read as follows:

Sausages must not contain tainted or decomposed meat, and must not contain prohibited preservatives, artificial coloring matter, or starch fillers, provided that starch or cereal products may be used as fillers in an amount not to exceed five per cent.

The special committee on tuberculosis sanatorium bill made its report through Doctor Lerrigo, the chairman, and upon motion the committee was ordered to be continued and to present the bill to the legislature for passage. Doctor Lerrigo then offered the following resolution, which, upon motion, was adopted:

Resolved, That the State Board of Health, in fulfillment of sections 4 and 6 of the act creating said Board, shall inspect annually each of the state charitable institutions through committee or committees appointed by the president of the Board. Such committees shall make an annual report to the Board covering the sanitary condition of institutions inspected, sewerage, water and food supply, health of inmates, and recommendations for improved methods of treatment, and publication shall be made in the *Bulletin* of such parts as the Board may direct.

A motion was made that the legislature be requested to continue the laboratory work as already inaugurated, with sufficient means for its further equipment and maintenance. This motion was carried.

Upon motion, the Board unanimously indorsed the recommendations made by the secretary concerning needed legislation.

Upon motion, the secretary was instructed to call the attention of the federal authorities to the supposed violation of the federal and internal revenue laws by the Continental Creamery Company.

No further business appearing, it was moved that the Board adjourn.

The following bills were audited and allowed.

G. E. Locke	$9 65
A. B. Scott	36 50
H. M. Bentley	31 90
J. B. Carver	20 00
E. P. Mills	9 65
B. J. Alexander	15 60
J. B. Carlile	29 00
L. A. Golden	36 30
C. D. Welch	24 00
C. H. Lerrigo	10 80
J. T. Willard	1 35
E. H. S. Bailey	2 65
L. E. Sayre	1 55

SECRETARY'S REPORT.

Mr. President and Members of the Board:

The year of 1906 now about drawing to a close will go into history as marking the year of the most aggressive and progressive work that the State Board of Health has thus far accomplished. It is impossible to remain stationary in this age of activity and progress, and they who can be content to drift in the affairs of human effort have no place in the public confidence nor in the world's movement towards the Utopian idea of perfection. It has been our set purpose to endeavor to keep abreast of the progress in sanitary science and preventive medicine, and to have a small part at least in the general reform movement toward bettering the condition of our fellow men in such places and things, as the work of this Board naturally brings us in contact with them. To what extent our hopes have been realized, and in what respect the sanitary conditions of the state have been improved, must be left to the judgment of others.

I herewith submit a brief review of the work of the Board during the past year, omitting, of course, the numerous minor details of daily recurrence which take up much of the time and energy of this office. One of the most important factors in the accomplishment of our purpose has been through the medium of the official organ of the Board, the *Bulletin.*

When I assumed the duties of secretary, two years ago, I was deeply impressed with the necessity of some means of monthly communication with the sanitary officials of the state, and through which to give out such information to the citizens of our commonwealth as might be found necessary in safeguarding their health and personal interests. Hitherto the only means of official communication this Board had was its biennial report, which was of little value except from a statistical standpoint to the few who delve in sanitary science. Through the kindness of Mr. McNeal, the state printer, we were able to arrange for the publication of a monthly *Bulletin,* the first number of which was issued in July, 1905. The modest sheet of eight pages that made its first appearance on that occasion has steadily grown in both size and favor, until we have found it necessary to have thirty-two pages in order to cover the month's work and needs.

Through this medium publicity has been given to the analyses of food and drug products, so ably conducted by our analysts at the State University and Agricultural College. Through this medium the Board's orders and decisions, the discussion of sanitary problems and useful information have been disseminated in a way which could not have been possible otherwise. From our first edition of 500 copies, we now have published monthly 1600, with the mailing list growing daily. In my judgment, provision should be made for getting out an edition of 5000 copies, and the name of every physician, school-teacher, library, and county, city and state official be added to the mailing-list.

In the January issue, 1906, was published the first food analyses, which received the widest publicity in the daily press and was the first Herculean stroke in the enforcement of our pure food law. The publication of food and drug analyses has continued up until the present time, with the result, I am confident, of restricting and preventing much adulteration that had hitherto been practiced by manufacturers not only in this state, but in adjoining states, whose products are sold in Kansas. As publicity is the greatest moral disinfectant thus far discovered it will be our purpose and aim to continue the publication of such analyses from time to time.

PURE FOOD AND DRUGS.

The law prohibiting the sale and manufacture of adulterated foods and drugs in this state makes no provision for nor charges any one specifically with its enforcement, hence it has been a dead letter on the statute-books for many years. After the passage of the law by the legislature of 1905 designating the chemical departments of the University and Agricultural

College as places where foods and drugs might be analyzed and charging the State Board of Health with the publication of such analyses, it seems that it was clearly the intention of the legislature that this Board have general jurisdiction in such matters.

At all events, one year ago this last September the first samples of food were purchased on the open market, notwithstanding the absence of any appropriation for such a purpose, and were sent to the University for analysis. With this opening wedge and the publication of the result of such analyses, the work has grown until it now forms a very large share of the daily routine of this office in correspondence and personal conferences with those interested. While much has been accomplished, much still remains to be done in this important work. The insight to ways, means and methods of unscrupulous manufacturers and dealers thus gained during the past year, and the passage of the national pure food law, which in effect checks up to each state the cleaning of its own dooryard, convinces me of the urgent and absolute necessity of the passage of a pure food bill by our present legislature, preferably along the lines of our national law, which will also make provision for food inspection, for it cannot be doubted that the best law that might be placed upon the statute-books will be of but little value if inspection of the products on the shelves of the grocers and druggists is not systematically and regularly carried out. In accordance therewith a bill has been framed, which has been submitted to our food and drug analysts, the attorney for the Board, and the attorney-general for their approval, and which I trust will meet the hearty approval of this Board and their united influence in securing its passage.

UNITED STATES GEOLOGICAL SURVEY.

Two years ago an effort was made to have legislation enacted to give this Board the sanitary control of the waters of Kansas, including the inspection of plans and specifications for the erection and construction of public waterworks and sewer systems. This bill met with defeat, and the continuance of the crime of polluting the streams, lakes and natural reservoirs from which our citizens derive their source of water supply is unabated.

It seems impossible to obtain anything like an accurate report of the number of typhoid fever cases occurring in the year 1905. The deaths reported from typhoid fever number 397, which makes a death rate per 100,000 population of 28.9. The number of cases and deaths reported thus far this year show an increase in this malignant disease, and indeed, a review of the data for the past ten years shows a gradual ascending scale in the mortality from typhoid fever.

It was in consideration of the above facts, together with the constant appeal to this Board by municipalities and citizens to prevent the pollution of their water supplies and abate nuisances contributing toward their contamination, that was the occasion for appealing to the federal government to help us in determining the sources of healthful water supply, the causes and sources of pollution, the collection of industrial wastes into profitable by-products, and the determination of the economic and industrial usefulness of the natural waters of the state.

Correspondence with the Department at Washington has finally resulted in a provisional agreement which the secretary has signed in behalf of the Board, and which has been signed by H. C. Rizer, acting director, in behalf of the United States Geological Survey, and under this agreement the work has actually begun under the immediate supervision of Mr. Horatio N. Parker, assistant hydrographer. This agreement has been signed since the last Board meeting, and I trust will meet with the Board's approval. This work also contemplates the sanitary survey of every city and village in the state, which information will be kept on file in this office under the card index system, and afford valuable data for the interpretation of local epidemics and suggest the means for their suppression. The collection of this information, which will be of inestimable value along the lines above indicated, will be of little use so far as the sanitary work of this Board is concerned, until such time as the legislature sees fit to give its approval to laws by means of which the continued pollution of the natural waters may be prevented or modified, and expert account be taken and permission required of the Board for the installation of public water-works and sewer systems. Mr. Parker, who has had a wide experience as an expert in many states, has kindly consented to express his views in this important matter in a bill to be presented to the legislature at its session this winter.

STATE LABORATORY.

The legislature of 1905 made provision for the appointment of a bacteriologist for the Board at a salary of $900 a year. They failed, however, to make any appropriation or provision for the establishment or maintenance of a laboratory, the purchase of the necessary supplies for mailing specimens, postage and other incidental expenses. Notwithstanding the absence of an appropriation for this work, we have endeavored to meet the situation by the use of our sanitary fund, and thus the state laboratory has been established under the supervision of Dr. S. E. Greenfield. There can be no doubt that much good has been accomplished through the medium of the state laboratory in the early diagnosis of tuberculosis and diphtheria, which examinations are now made free of charge for all physicians in the state. County repositories have been established in each county where mailing tubes can be had for sending in specimens. This expense has drawn heavily on our sanitary fund, which is supposed to be used for other purposes. The legislature should make sufficient appropriation to enlarge our laboratory and provide for its maintenance.

On December 13 the following letter was received from Chancellor Strong, of the State University:

"*Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:*

"DEAR SIR—After conference with the board of regents of this University, I am writing you officially to offer to the State Board of Health the use of our laboratories to conduct the expert scientific work that may be necessary in connection with the Board of Health. The laboratories at the University are the most extensive by far in the state, and with very little increase of expense the scientific work which would naturally fall to the Board of Health may be done here by experts whose services would otherwise occasion the state large expense. It is the desire of the board of regents of this University to make the institution as useful to the general life of the state as possible. I, of course, understand that it will be necessary to do the immediately urgent work at Topeka. We stand ready, however, to assist in the conduct of such work for the State Board of Health as cannot be done at Topeka with the present equipment.

"Will you please call the attention of the State Board of Health to this communication? I shall be glad to confer with them more particularly in regard to the matter if they desire it.

"With best wishes, I am, very truly yours,

FRANK STRONG, *Chancellor.*"

The generous offer of the chancellor will be thankfully received by the profession throughout the state and provide means whereby any kind of scientific work can be done without cost to any citizen. While this Board should gladly and thankfully accept the offer extended, it seems to me that the laboratory as already established should be continued in the city of Topeka to cover the immediate necessities of the Board and the local examinations naturally coming to this office. Pathological specimens, bacteriological tests for contaminated water, and such other work requiring more time and extensive apparatus, could be and should be referred to the University hereafter. Just how the situation might be covered and framed in a suitable bill I have not yet thought out, and I trust the Board will make some suggestion at this meeting towards a satisfactory solution of the state laboratory. Doctor Greenfield will submit to the Board her report of the work done during the year.

TUBERCULOSIS CAMPAIGN.

Since coming in touch with the work of the Board as its secretary I have become more deeply impressed, if possible, than heretofore by the terrible ravages in sickness and death by the "great white plague." When one notes the continually increasing number of deaths from this dread disease whose victims are selected from those in the very prime of life, one is appalled at the devastation, suffering and economic loss on every hand. This condition is all the more distressing when it is now quite generally conceded to be a preventable disease. If it is, indeed, a disease to be prevented, the duty of this Board is clearly indicated in that they should leave no stone unturned or resource untried that might contribute in any measure or in any degree whatever toward its suppression or prevention. When one sees a whole family wiped out of existence in the brief space of two years, and communities infected and their population menaced with this pestilential malady, it must call forth our best efforts in measures of prevention, and excite our deepest sympathy in the havoc wrought in our beloved commonwealth.

This conviction gave birth to the plan of a tuberculosis census, in which it was hoped that the necessary information might be collected indicating the name and address of every tuberculous case in the state, whereby preventive measures could be applied. The history of this inauguration has been indicated in the last quarterly report, and it would be appropriate at this time to give you a summary of the information thus collected.

The number of cases reported to this office by physicians through a direct appeal sent out to them is 427, which are tabulated by counties as follows: Allen, 9; Anderson, 7; Atchison, 8; Barber, 2; Barton, 5; Bourbon, 7; Brown, 12; Butler, 4; Chase, 2; Chautauqua, 4; Cherokee, 3; Cheyenne, 1; Clay, 6; Cloud, 1; Coffey, 6; Cowley, 10; Crawford, 7; Decatur, 1; Dickinson, 7; Doniphan, 1; Douglas, 9; Edwards, 1; Elk, 2; Ellis, 2; Ellsworth, 4; Finney, 1; Ford, 10; Franklin, 11; Graham, 2; Gray, 2; Greenwood, 4; Harvey, 3; Jackson, 5; Jefferson, 8; Jewell, 6; Johnson, 8; Kingman, 1; Kiowa, 1; Labette, 19; Leavenworth, 8; Lincoln, 1; Linn, 2; Logan, 2; Lyon, 12; Marion, 2; Marshall, 9; McPherson, 5; Miami, 1; Montgomery, 8; Morris, 4; Morton, 1; Nemaha, 7; Neosho, 7; Ness, 3; Osage, 4; Osborne, 2; Ottawa, 8; Pawnee, 2; Phillips, 10; Pottawatomie, 2; Pratt, 1; Republic, 7; Reno, 5; Rice, 12; Riley, 1; Rooks, 2; Rush, 3; Saline, 6;

Sedgwick, 8; Shawnee, 8; Smith, 2; Stafford, 1; Sumner, 24; Thomas, 1; Wabaunsee, 5; Washington, 1; Wilson, 5; Woodson, 4; Wyandotte, 35.

From the reports of cases through county health officers, and the number of deaths for the year ending November 30, 1906, it would seem that there has been not more than one-third of the cases reported by physicians. This is greatly to be regretted as it was hoped that physicians would readily lend their influence in the accomplishment of the purpose designed in such means of prevention as had been suggested in the circular letter mailed to them. The lack of interest in this respect is most notable in the large cities, particularly Wichita and Topeka, physicians having a large practice and no doubt a number of cases refusing or neglecting to make this report, notwithstanding a stamped envelope was sent for reply. The counties in which no cases were reported are as follows: Clark, Comanche, Geary, Gove, Grant, Greeley, Hamilton, Harper, Haskell, Hodgeman, Kearny, Lane, Meade, Mitchell, Norton, Rawlins, Russell, Scott, Seward, Sheridan, Sherman, Stanton, Stevens, Trego, Wallace, and Wichita. Most of these counties are in the western part of the state and in all probability there are no cases there to report.

Our pamphlet on prevention has been mailed to each case thus far reported, or to the physician reporting the case. In addition to this, pamphlets have been sent to the county health officers with a list of names of deaths for the past year from tuberculosis, requesting that a copy of "Prevention of Tuberculosis" be placed in each family where such a death had occurred, with additional instructions to thoroughly cleanse and fumigate the house if such had not previously been done, and to make an examination of the family in order to discover incipient cases if any existed. From the reports received I have confidence to believe that this order was quite generally observed throughout the state, and infected places and things thoroughly cleaned and disinfected, removing to that extent at least dangers from inoculation of the well.

The work of this campaign has been further broadened in an educational way by providing the State Normal School, the University and many of the high schools throughout the state with these pamphlets, to be used as textbooks in the physiology classes. The information thus gained among the pupils of the susceptible age to the disease will not only act as a caution and a warning to them, but be the means of broadcasting information among the members of their families and friends. This training seems to be particularly necessary for those who are engaging in the occupation of teaching, for the protection of the young lives of their pupils is in a measure entrusted to their care during many hours of the school year. It is our purpose to provide every high school and every school-teacher within the state a copy of this pamphlet on prevention as soon as the edition can be printed for distribution. It is confidently hoped that this propaganda of education will bring favorable results in the coming years.

A summary of the reports of county health officers for the year ending November 30, 1906, shows 1132 cases reported, with 641 deaths, from tuberculosis. Just how accurate these statistics are we are unable to say, but my personal judgment is that they are approximately accurate. No doubt they include, however, the imported cases—those who come from other states to the more genial and equable climate of our fair state. This, then, is briefly a summary of the work thus far accomplished in the Board's tuberculosis crusade, which will be continued as diligently and efficiently as we have the strength and means.

These statistics, gathered through the channels above indicated, and the wide-spread diffusion of the disease throughout the state, with its attendant sickness, suffering, and death, together with the enormous economic loss, suggest that the state has a duty to perform in another direction, aside from its work through this Board, namely, the erection of a state sanatorium for the care of the state's tuberculous poor. There is scarcely a state east of the Missouri river, together with many west of that place, that have not already erected or are in the course of constructing suitable sanatoria for this purpose. The history of these institutions and the results obtained by them in the care of incipient cases, and the dissemination of preventive measures among the people, has amply justified the expense thus far involved in their erection and maintenance. Indeed, in these older states they are asking for additional institutions, that the splendid work inaugurated may be enlarged to something approximating the necessity of the momentous work before them. Germany has something like 200 sanatoria for the treatment and care of tuberculosis; almost every state or province has such an institution, and the reports issued by the imperial board of health give great encouragement for the cure of this disease, and its prevention among the well. Your committee appointed to formulate a bill to present to the legislature for the erection of such an institution in this state will make its report, no doubt, at this meeting, and such bill should receive our hearty support and influence towards its enactment into statutory law.

The various state hospitals for the care of our unfortunate insane and epileptics, as well as the State Penitentiary and reformatories, should also be provided with isolated quarters for the care of the tuberculous cases. It is nothing short of a crime to permit such cases to remain unsegregated from the well while they are unable to properly care for themselves or to use such necessary preventive measures as to protect those who might come in personal contact with them, and it is earnestly hoped that the legislature will make the necessary provisions for such cases.

The following letter has been received recently from the secretary of the National Association for the Study and Prevention of Tuberculosis:

"DEAR SIR—I herewith enclose draft of the amendment to the by-laws of the National Association for the Study and Prevention of Tuberculosis providing for the establishment of the advisory council.

"The committee of arrangements extends a cordial invitation to your Board to send a representative to the meeting of the council, under the provision made in the by-laws.

"The next meeting of the advisory council will be held at the time of the annual meeting of the National Association in Washington, D. C., on May 6.

"Questions of general interest and importance in the antituberculosis work will be presented for discussion, the definite program to be decided after consultation among the organizations signifying their intention to be represented at the meeting.

"Trusting that you will be willing to cooperate, I am, yours very truly,

LIVINGSTON FARRAND."

This Board should have a representative at these meetings, as much valuable information concerning methods and means put into operation by other boards and experts could be gained, and the work of our campaign correspondingly enhanced. This meeting also comes usually one or two days before the annual meeting called by the surgeon-general of the marine hospital service, in accordance with an act of Congress, which the executive officers of state boards of health are expected to attend. Thus far the Kansas State Board of Health has never been permitted to attend any meeting outside of its own jurisdiction, by reason of lack of funds for that purpose. This should not be the case. It is by reason of these national gatherings, the coming in personal contact with the great workers in sanitation and prevention, in discussing ways and means, that steel sharpens steel and the progress in sanitary science advances. The state of Kansas can no longer afford to lag in this matter, as it is anything but economy to continue such a practice. Ample means should be provided for a representative of this Board to attend the national gatherings of this character, that we may not only help in the forward movement of humanity, but in turn be helped. To that end we mean to ask for a contingent fund, out of which may be paid the expenses incident to attendance upon these meetings, and it is recommended that the Board elect a delegate to represent it at the next meeting of the National Association for the Study and Prevention of Tuberculosis, to be held in Washington.

In this connection it might be added also that considerable correspondence has been had with the view of bringing to this state, or creating for ourselves, a tuberculosis exhibit. Thus far no definite plans have been formed as we were without the necessary means for their accomplishment. The exhibit of the national association has been spoken for almost a year in advance by other states and cities, and we therefore cannot expect to get a date for such an exhibition very soon. This correspondence has developed the fact, however, that a reasonable exhibit might be made for from $800 to $1000, which could be owned by the state and sent from city to city, including even the smaller villages and communities, with but little additional expense. A member of the Board or the secretary might have temporary charge at certain points and the local profession be asked to give lectures in a week's program which is generally held during the exhibition at each place. I will probably have more to report on this matter at a later date.

CONDITIONS OF PUBLIC HEALTH DURING THE PAST YEAR.

The following numbers of cases and deaths from contagious and infectious diseases have been reported in the past year, which are compared with the numbers reported the year previous:

Typhoid Fever:	*Cases.*	*Deaths.*	Diphtheria:	*Cases.*	*Deaths.*
1905	1,728	397	1905	1,800	251
1906	1,555	267	1906	2,151	259
Scarlet Fever:			Smallpox:		
1905	1,359	76	1905	4,116	83
1906	1,247	87	1906	1,871	8

It appears from this that aside from diphtheria the number of cases occurring within the past year is less than the year previous, notwithstanding our growing population, which speaks well for the vigilance of county health officers and the more effective means put in operation for disinfection and isolation. With the more rapid means of communication about us these latter days we can expect, for a good many years to come, the annual recurrence of these contagious diseases. Typhoid fever, however, is more clearly and definitely a preventable disease, and excites our comment and arouses our alarm.

NEW REGISTRATION LAW.

The statistics as gathered in this office are manifestly inaccurate and of only approximate vâlue, due to the inadequate and cumbersome system of reports through county health officers. These officials are usually underpaid, the system generally in vogue being that of advertising for bids for doing the work supposed to be done by such an official, and the one making the lowest bid receives the appointment at the hands of the board of county commissioners regardless of his personal fitness or scientific training to do the work required by this Board. It is my judgment that the State Board should be permitted to name the county health officers, or at léast have the power for their removal when they refuse or neglect to properly perform their duties, and that their compensation should be fixed by law in accordance with the population of their respective counties, as other county officials are generally paid. We can hardly expect better work than we now have until this antiquated system of the appointment of health officers is abolished and proper compensation and selection of men be made for this important office. I want, however, to make personal and public acknowledgment of the faithfulness and efficiency of the present county and municipal health officers of the state. There are probably a half dozen who should be engaged in some other occupation, but, from the numbers which must be considered, they are the exception and not the rule.

Discussion of this question naturally leads up to the consideration of the necessity for a new registration law, which was discussed somewhat at length in the November *Bulletin.* To briefly summarize, I would call the Board's attention to the fact that the United States Department of Commerce and Labor, through the Bureau of the Census, has made special request that our legislature pass a new registration law, by means of which accurate and trustworthy vital statistics may be gathered in this state, which will not only be of immediate value to our own citizenship, but will pass current as fulfilling the requirements of the federal government. This action has been requested by a joint resolution passed by Congress, and it is to be hoped that the bill presented, which has been formulated by the Bureau of the Census, and is almost an exact copy of the Pennsylvania law which has been found to work so admirably, will receive your support and influence.

RAILWAY-CAR SANITATION.

Two years ago this Board asked for legislation requiring transportation companies doing business in this state to improve their sanitary conditions by complying with certain well-known sanitary requirements in coach cleaning and the abolishment of certain practices inimical to the public health. This legislation met with an early and untimely death in the railroad committee of the senate. Nevertheless, every effort has been made to accomplish the same purpose through correspondence and appeal to these companies together with organization with other state boards of health.

That reforms have been greatly needed in this respect there can be no doubt, and that the present construction of railway-coaches and their long runs without the opportunity of efficient cleaning renders the problem one of no easy solution. Keeping in mind, therefore, these difficulties, rules were prepared and finally suggested that were thought to be entirely reasonable, and which could be put into operation without great added expense to the transportation companies. The rules selected were the modified rules adopted by the Indiana State Board of Health by a commission composed of a committee from the Indiana State Board of Health and a committee representing the railroad and steamboat lines doing business in that state. It was thought that the rules agreed to by this joint committee would be such as would meet with the approval of transportation companies in this state and be of practical and ready application. Accordingly, these rules were submitted early in the summer. Copies were also sent to the secretaries of the state boards west of the Mississippi river, asking for their cooperation in the general movement. It is with pleasure that we are able to announce the acceptance of these rules, in a somewhat modified form, by most of the transportation companies doing business in Kansas. First, we have the written assurance of the Pullman Company that their cars are thoroughly and efficiently fumigated at monthly intervals, and whenever they are known to have carried an infectious disease, while those cars running to health resorts and the Southwest are fumigated at more frequent intervals. The floors, closets, passageways, carpets, cuspidors and sinks receive thorough and efficient cleansing, and all the bedding is as thoroughly aerated at the end of each run as climatic conditions will permit at the time. Taken altogether, then, it may be said that the Pullman service in Kansas is conducted in a sanitary and efficient manner.

The first of the transportation companies to accept these rules was the Union Pacific railroad. The modified rules as, adopted by them, are as follows:

"RULE 1. *Steam-railway Coaches.* Day coaches shall be thoroughly cleaned at the end of each trip, and in no instance shall a day coach go uncleaned longer than two days. The thorough cleaning of the day coaches shall consist as follows: (*a*) Windows and doors shall be first opened and the aisle strip, which should be of rubber, if there be any, removed from the car; (*b*) all upholstering dusted and brushed; (*c*) floor mopped or swept after it has been sprinkled with water, to which may be added an approved disinfectant; (*d*) after cleaning as in (*c*), the floor should be scrubbed with soap and water, to which soda ash or like cleansing agent may be added, and, after scrubbing, the floor should be mopped with a solution of Kresol of one- or two-per-cent. strength; (*e*) all arms of seats, panels between windows, window ledges, windows, doors and door-knobs shall be washed with soap and water, to which a cleansing agent may be added; (*f*) closet floors and walls shall be cleaned by sweeping and washing and wiping with a disinfecting solution (Kresol), and urinals and hoppers thoroughly cleaned and disinfected with Kresol; (*g*) water-coolers shall be frequently emptied, rinsed, and scalded, and shall be filled with palatable drinking water when in service; (*h*) the ice should never be handled with the hands, but a pair of ice-tongs or an ice-scoop should be used; (*i*) and, lastly, day coaches shall be disinfected with formaldehyde gas in quantities of not less than forty fluid ounces of forty-per-cent. formaldehyde to each coach by means of the Behm sprinkler and sheet method at the period of general cleaning and renovation, said period not to exceed ninety days, and also whenever a case of any listed disease is known to have been carried. Plush seats and backs shall be removed when possible and dusted by air-blast.

"RULE 2. Coaches shall be provided with cuspidors. Placards shall be displayed in all railway waiting-rooms of the company, having plainly displayed thereon the following notice: 'Spitting on the floor is forbidden.—Consumption, la grippe, coughs, colds and all diseases of the air-passages are spread by spitting, and these maladies kill thousands of people annually. It is therefore forbidden to spit on the floor. Penalty, ——. It is the duty of trainmen to warn against violating this health rule.—By order of the State Board of Health.'

"RULE 3. Parlor-, buffet- and dining-cars shall be cleansed at cleaning terminals, as set forth in rule 1. Carpets and draperies to be removed, dusted, sunned and aired, provided meteorological conditions permit. Food boxes, refrigerators, closets, drawers and cupboards to be cleansed, scalded and treated with a one- or two-per-cent. solution of Kresol at least once a week in spring, summer and autumn months, and once every two weeks in winter months.

"RULE 4. Conductors and brakemen in charge of steam trains shall pay proper attention to ventilation, and shall promptly reprove and warn all persons who spit on the floor or otherwise befoul the car in which they are riding. They shall also inquire concerning any case of sickness which they may notice, and determine as best they can whether or not it is a listed disease, and if found or suspected to be listed, the health officer at the next stop may be appealed to for the purpose of caring for the case as seems best.

"RULE 5. The list diseases are declared to be: Smallpox, diphtheria, scarlet fever, erysipelas and measles. All common carriers and their employees are forbidden to knowingly carry any person afflicted with the above-named disease.

"RULE 6. Dry sweeping of cars while in transit is prohibited. When cars are swept while in transit, wet sawdust should first be scattered on the floor, when the sweeping should be done with an ordinary broom or broom-brush. A. F. JONAS, *Surgeon Union Pacific Railroad.*"

The Union Pacific railroad is to be congratulated on its prompt and forward movement in this respect. Certainly its equipment is kept in as hygienic condition as the present construction and method of operation will permit.

Following this was the acceptance of the Missouri, Kansas & Texas railroad, and later the 'Frisco road. The rules adopted by the latter, in a somewhat modified and briefer form, are as follows:

"RULE 1. Coaches must be thoroughly cleaned at the end of each trip, and shall consist as follows: Windows, doors and ventilators shall be opened, and all mattings, carpets, upholstered seats and rests removed. Where compressed air is not used seats must be swept and dusted.

"RULE 2. Cars shall be swept or blown out with compressed air, floors scrubbed with soap and water, to which soda ash or like cleansing agent may be added, and mopped with one-per-cent. solution of formalin (1¼ ounces formalin to one gallon of water). Use water sparingly; floor must not be flooded.

"RULE 3. Arm-rests, walls and window-ledges shall be wiped off with damp cloth, and windows washed and wiped.

"RULE 4. Cuspidors, urinals and hoppers cleaned and disinfected with one-per-cent. solution of formalin.

"RULE 5. Water-coolers rinsed and scalded.

"RULE 6. Coaches shall be disinfected with formaldehyde gas at the period of general cleaning, said period not to exceed ninety days, and also whenever a person having a contagious disease has been carried.

"RULE 7. Dry sweeping of cars while in transit is prohibited. Sawdust should be scattered on the floor and the sweeping done with damp broom or brush."

These have been accepted by your secretary as entirely satisfactory to this Board.

It is noted, therefore, that the three remaining trunk lines of large mileage doing business in this state, namely, the Atchison, Topeka & Santa Fe, the Rock Island and the Missouri Pacific railways, have not yet signified their intention or willingness to adopt the rules suggested, or any modified rules.

The practice of dry sweeping of coaches while in transit still continues, which is not only a matter of great discomfort to the passengers occupying such coaches, but a positive menace to their health also. It cannot be successfully denied that such practice is dangerous, for with the cars being occupied almost daily by one or oftentimes many tubercular cases seeking the western climate, without means provided for their expectoration, which invites spitting upon the floor, which soon becoming dried is stirred up with the dust and refuse of the car by the train porter in the practice of dry sweeping, must render the air germ-laden, and a serious menace to the health of the occupants of the car. Then account must be taken of numerous other infectious and contagious diseases—the milder walking forms of typhoid, infecting closets and lavatories, the various types of throat and mouth infection, etc. It would seem, therefore, that legislation is needed and should be asked for which will place the sanitary control of railway-coaches and electric cars under some responsible authority. Your instruction is asked in this important matter.

WORK OF THE PAST QUARTER.

The foregoing, then, is a brief summary of the work transacted by the Board during the past year until the present quarter. The amendment of our rules on pure food was postponed at the last meeting of the Board and remains as unfinished business. Since that time the national committee created by law for that purpose have formulated certain rules and regulations to govern the provisions of the national pure food and drug laws. These rules have been published in the *Bulletin* and are no doubt familiar to each member of this Board. It is suggested that these rules be adopted by this Board as the rules governing our own food laws in so far as they are applicable, and also pending the action of the coming legislature in the passage of our proposed new pure food law. It would perhaps seem out of place at this time to consider further amendment of our original rules adopted by the Board a year ago. Should the legislature see fit to take favorable action upon the bill which will be presented, it will be time enough at our March meeting to definitely work out such rules as are appropriate for their government in this state.

A number of trips have been made throughout various parts of the state investigating the cause and ways and means of suppressing smallpox and diphtheria, and the general sanitary condition of certain cities. The suggestions offered in each case were promptly carried out, in so far as they were able to do so.

In conformity with a resolution passed by the Board at its last meeting, visitations have been made by committees thus appointed to the principal packing-houses in the state. The reports of these visits will be made by the committees. It was thought best to do this rather than make any effort to compile the various reports by the secretary. These committees will no doubt be ready to report at this meeting. In a general way it may be observed that the sanitary condition of the great packing-houses doing business in Kansas is good, that numerous improvements have already been made and are being made for the better sanitary condition and comfort of the employees, and that, perhaps best of all, preservatives and coloring matter are no longer being used in the meat products maufactured therein.

The rigid government inspection prevents, quite effectively, in my judgment, the use of diseased or unwholesome meats.

The revelations made last summer in visiting a number of private slaughter-houses suggested the inspection of all such by the county health officers of the various counties, and in accordance with this idea the order was made for such inspection. From the reports received, it would seem as if there should be some special legislation concerning the inspection by the health authorities of this state of private slaughter-houses and meat-markets. The rigid government inspection now practiced at the great packing plants makes it quite impossible for shippers to dispose of diseased animals or others, excepting they be in prime condition; hence the market for such must be found with the local butchers. This being the case, together with the unsanitary surroundings of the average country slaughter-house, has already indicated the urgent need of some sort of system of inspection by which the people may be as thoroughly assured of clean and wholesome products from these sources as they now are from the great packing-houses. This might be comprehended in the work of the food inspector, as suggested in the forthcoming bill, but I believe, in addition thereto, the duties and responsibilities of the county health officer should be enlarged so as to make him responsible for the control of public and *quasi*-public institutions doing business in this district.

DAIRY PRODUCTS.

The publication of butter analyses in our June and October *Bulletins* called forth many comments, mostly of a commendatory character, but a few of a decidedly different nature. Reference to the analyses contained in the June *Bulletin* shows that of the three samples analyzed all three contained an excess of water allowed by the national law, and a corresponding decrease in butter-fat. The publicity given these analyses had the effect in a large measure of reducing the overrun which hitherto has been a source of great profit to many of the creameries doing business in this state.

The analyses as published in the October *Bulletin* showed two samples as containing an illegal quantity of water, and that all but one of the twenty-one samples thus analyzed showed a net weight of less than one pound. Publication of these analyses called forth several letters which from their nature calls the Board into account for their action of the analyses and publication, and which I desire to present at this time.

PROSECUTIONS UNDER THE PURE FOOD LAW.

In this connection your secretary desires instructions as to the action of the Board after the 1st of January, when the collection of samples will be continued. Thus far no suits have been instituted for violation of the adulteration laws, first, because we desire to give wholesalers and retailers an opportunity to dispose of such illegal stock as they might have on hand, and second, we have depended entirely upon the moral persuasion of publicity, which has no doubt been a mighty factor in determining the action of food manufacturers and dealers to comply cheerfully and heartily with the Board's requirements. Is it the intention of the Board to institute suits and the collection of fines for all future violations? I desire specific instructions on this matter.

THE BOARD'S NEEDS AND NECESSITIES.

The authority and power conferred upon the State Board of Health by law is of such a nature, being in most instances merely of an advisory character, as to render it powerless in the enforcement of its orders, particularly in matters of nuisances and water-pollution. The entire health laws should be revised as such, giving the Board additional authority.

To summarize, therefore, the laws which we need and must have, if we carry out the objects for which this Board was created, are a nuisance law, a new pure food law, the United States Geological Survey law, and its companion, the sewer and water law. I believe also that provision should be made in our laws to give the State Board of Health sanitary control of the barber shops in the state. The former barber bill that was repealed by our last legislature was cumbersome, and failed in its object. My judgment is, that there is not so much a necessity for the examination of barbers in order that only those who understand how to shave a face and cut hair in the latest style shall be entitled to enter that occupation, as to have some authority to compel those conducting such barber shops and public bath-houses to keep them in a sanitary condition, including the proper care of instruments, towels, lavatories, etc. This cannot be done except by a system of inspection which might be comprehended by the Board having authority to appoint a general inspector who shall be an advisory member of the Board, and under the control and orders of the Board, and that he in turn appoint eight district deputies to look after the public places within their districts.

The Board at its last meeting provided for two new rules, which apply directly to barber shops, which rules prohibit the serving in any barber shop of a person infected with syphilis, and prohibits the serving in any public bath-house of any person suffering from gonorrhea. These rules are of manifest importance to the public patronizing these places, but cannot be expected to be enforced unless we have some system of inspection. The necessary expense incident to such inspection could be borne by the revenues received by the inspectors, and would, therefore, be no burden to the state. I desire your instructions in this matter.

The dairy products of Kansas are of such value and importance as to, in my judgment, necessitate a separate and distinctive law for their interest, inspection and control, and such law has been framed largely after the Minnesota law, and has been submitted to the experts of the Agricultural College for their approval.

CONCLUSION.

Kansas bears the proud distinction among her sister states of being the foremost in measures of reform. One of the frequent comments heard is that Kansas "does things." In a communication received from the secretary of the National Association of Boards of Health with the Marine Hospital Service, inquiry is made as to why Kansas has not hitherto taken part in these annual conferences. A portion of this letter is herewith submitted as indicating the splendid standing our state departments have abroad, and which also emphasizes the need of a more generous recognition of this department by our legislature, in order that we may accomplish the purpose for which we were created:

"We need only to say that certain departments of your state, notably your Department of Agriculture, confer distinction on your state and are sources of honorable pride to your people. Your State Board of Health, important enough in ordinary times and vitally important in times of pestilence and disaster, will reward your people with equal satisfaction if given an equal chance with the boards of sister states. We ask your legislature to reflect that unless the functions of this Board are in constant exercise and make use of all the facilities offered in the present status of American public hygiene, your people may suffer avoidable damage, because some extraordinary emergency may find your officials unprepared with the instruments of defense while the people of neighboring states are uncertain about the character and fitness of your public health work.

"Begging you to believe that we desire the aid of Kansas in organizing the national defense more than we insist upon the utility of this conference in developing the sanitary defense of Kansas, we are, Sir,

Most respectfully yours,
RICHARD H. LEWIS, *President*,
JOHN S. FULTON, *Secretary*,
National Association Boards of Health with M. H. S."

With the material wealth of Kansas increasing at an unprecedented rate, with the education, culture and refinement keeping equal progress with the accumulation of wealth, the time can no longer be delayed when efficient and progressive laws should be placed upon our statute-books, by which the life and health of the citizens of this great commonwealth may be properly safeguarded. Surely these precious lives are of more value than the golden store of grain of which we boast, and the cattle which feed upon a thousand hills, but which thus far have received our best and first attention.

S. J. CRUMBINE, *Secretary*.

REPORT OF BACTERIOLOGIST.

The following is a summary of examinations made during the eighteen months dating from July 1, 1905, to January 1, 1907:

Examinations of sputum	659
Specimens showing tuberculosis	228
Examinations for diphtheria	452
Specimens showing diphtheria	223
Tests of water	95
Examinations for gonorrhea	12
Specimens showing gonorrhea	5
Widal tests for typhoid	5
Widal tests showing typhoid	2

One rabbit was inoculated with brain of dog suspected of having rabies. The rabbit died on the fifteenth day with all the symptoms of dumb rabies.

Total number of examinations made, 1224.

Respectfully submitted.

SARA E. GREENFIELD, A. B., M. D.

FINANCIAL STATEMENT

Showing the amount of money expended by the State Board of Health for the two years ending December 31, 1906.

Item.			Salary of secretary.	Salary of clerk.	Special sanitary work.	Expenses of board.
1905.						
Jan.	1	Balance unexpended	$600 00	$300 00	$116 50	$391 90
Jan.	3	S. E. Greenfield, sanitary work			$20 50	
	5	Western Union Telegraph Company			5 28	
	19	Directory				$4 00
	19	Telephone rental				9 00
	31	Salary of secretary	$100 00			
	31	Salary of clerk		$50 00		
Feb.	2	S. J. Crumbine, trip to Horton			8 50	
	6	S. J. Crumbine, trip to Reform School			2 00	
	7	Postage and express				36 60
	8	S. E. Greenfield, supplies			18 50	
	14	W. F. Schoch				10 00
	28	Salary of secretary	100 00			
	28	Salary of clerk		50 00		
Mar.	6	S. E. Greenfield, supplies			12 55	
	8	E. H. S. Bailey, meeting			2 90	
	8	G. E. Locke, meeting				9 15
	8	H. M. Bentley, meeting				23 40
	8	E. P. Mills, meeting				11 15
	8	J. B. Carver, meeting				23 00
	8	L. A. Golden, meeting				31 62
	8	B. J. Alexander, meeting				14 00
	9	S. J. Crumbine, trip to Kinsley			13 24	
	14	Postage and express				43 90
	22	S. J. Crumbine, trip to Thayer			16 02	
	24	S. J. Crumbine, trip to Havensville			8 37	
	20	S. E. Greenfield, supplies			15 48	
	31	Salary of secretary	100 00			
	31	Salary of clerk		50 00		
Apr.	14	Telephone rental				9 00
	14	B. J. Alexander				3 50
	30	Salary of secretary	100 00			
	30	Salary of stenographer		50 00		
May	5	Postage and express				18 63
	6	E. P. Mills, trip for Board				10 10
	31	Salary of secretary	100 00			
	31	Salary of stenographer		50 00		
Jun.	27	E. H. S. Bailey, meeting			2 66	
	27	Express and postage				9 52
	27	Repairing clock				1 25
	27	A. B. Scott, meeting				21 95
	27	L. A. Golden, meeting				23 23
	27	C. D. Welch, meeting				19 45
	27	J. B. Carlile, meeting				15 64
	27	J. B. Carver, meeting				14 96
	27	B. J. Alexander, meeting				9 16
	27	E. P. Mills, meeting				6 86
	27	G. E. Locke, meeting				4 81
	30	Salary of secretary	100 00			
	30	Salary of stenographer		50 00		
	30	Unexpended balance				3 02
Totals			$600 00	$300 00	$116 50	$391 90

FINANCIAL STATEMENT—CONTINUED.

Item.			Special sanitary work.	Expenses of Board.
1905.				
Jul.	1....	Appropriations for fiscal year: Salary of secretary, $1200; salary of stenographer, $720; salary of bacteriologist, $900......	$600 00	$800 00
	5....	S. E. Greenfield, supplies and postage	$8 45	....
	5....	Postage and express	....	$26 59
	7....	Independent Telephone Company, rental	....	9 00
	7....	Mailing-tubes	3 30	....
	7....	Mailing-boxes	16 32	....
	7....	Sticks for diphtheria tubes	2 00	....
	7....	Mailing-cases	28 00	....
	10....	Express and postage	....	17 80
	15....	S. J. Crumbine, trip to Sedan	18 20	....
	15....	C. D. Welch, trip to Sedan	8 95	....
	19....	Missouri & Kansas Telephone Company	....	9 00
Aug.	7....	S. E. Greenfield, supplies and express	20 04	....
	28....	Postage, express, etc	....	28 25
	31....	S. J. Crumbine, attending conference concerning yellow fever quarantine	10 62	....
Sep.	14....	C. H. Lerrigo, meeting	....	5 00
	14....	B. J. Alexander, meeting	....	11 60
	14....	H. M. Bentley, meeting	....	17 50
	14....	C. D. Welch, meeting	....	24 00
	14....	J. B. Carlile, meeting	....	22 00
	14....	G. E. Locke, meeting	....	9 83
	14....	J. B. Carver, meeting	....	17 85
	14....	E. P. Mills, meeting	....	9 00
Oct.	6....	Express for laboratory	4 87	....
	6....	Express	....	2 10
	16....	Incidentals	....	6 65
Nov.	1....	Incidentals	8 05	....
	3....	Express, postage and telephone	....	35 60
	3....	Missouri & Kansas Telephone Company	....	9 00
	3....	Independent Telephone Company	....	9 00
	11....	Trip to Moline	11 28	....
	27....	Trip to Courtland	11 16	....
	27....	Mailing-cases and bottles	44 00	....
Dec.	7....	Supplies, express, etc	12 21	....
	18....	Trip to Yates Center	4 10	....
	18....	Mailing-tubes	24 72	....
	21....	J. B. Carlile, trip to Douglass	15 75	....
	21....	E. H. S. Bailey, meeting	2 25	....
	21....	J. B. Carlile, meeting	....	25 35
	21....	E. P. Mills, meeting	....	9 20
	21....	G. E. Locke, meeting	....	10 01
	21....	J. B. Carver, meeting	....	23 00
	21....	C. H. Lerrigo, meeting	....	5 00
	21....	H. M. Bentley, meeting	....	22 50
	21....	L. A. Golden, meeting	....	32 30
	21....	C. D. Welch, meeting	....	22 00
	22....	S. J. Crumbine, trip to Dexter	20 62	....
	31....	Telephone toll bills, etc	4 88	....
	31....	Freight	2 19	....
1906.				
Jan.	2....	Postage	....	25 00
	2....	Telegraph	3 75	....
	2....	Express	6 00	....
	4....	Independent Telephone Company	....	9 00
	11....	Bacteriological supplies	10 30	....
	23....	Missouri & Kansas Telephone Company	....	9 00
Feb.	6....	Express and supplies	9 00	....
	10....	Subscription to *Journal*	....	5 00
	15....	Postage	....	18 75
Mar.	1....	Supplies	9 05	....
	1....	Trip to Lawrence	1 60	....
	5....	Express and postage	....	19 67
	20....	Trip to Winfield	4 60	....
	21....	Postage and telegrams	....	25 55
	28....	Book on infectious diseases	6 39	....
	29....	Glass vials	9 00	....
Apr.	1....	Missouri & Kansas Telephone Company	....	9 00
	1....	Independent Telephone Company	....	9 00
	25....	Report on statistics	1 00	....
	30....	Supplies and express	14 02	....

FINANCIAL STATEMENT — CONTINUED.

	Item.	Special sanitary work.	Expenses of Board.
1906.			
May 1	Trip to Ellinwood	$8 25	....
10	Samples of food	6 46	....
10	Supplies	31 75	....
10	C. D. Welch	13 02	....
10	Postage	27 08	....
15	Express, telephone, etc.	9 19	....
15	Oliver typewriter	50 00	....
Jun. 1	Postage and zincs for *Bulletin*	23 35	....
1	Samples for analysis	4 48	....
1	Expenses of dog experiments	26 73	....
15	Samples for analysis	8 10	....
15	Supplies for laboratory	24 60	....
15	Trip to Oberlin	20 42	....
21	B. J. Alexander, meeting	....	$14 05
21	J. B. Carver, meeting	....	30 00
21	G. E. Locke, meeting	....	16 60
21	H. M. Bentley, meeting	....	24 00
21	E. P. Mills, meeting	....	22 10
21	C. H. Lerrigo, meeting	....	10 00
21	A. B. Scott, meeting	....	43 50
21	J. B. Carlile, meeting	....	37 85
21	L. A. Golden, meeting	....	37 32
21	C. D. Welch, meeting	....	15 98
	Totals	$600 00	$800 00
	Appropriations for fiscal year: Salary of secretary, $1200; salary of stenographer, $720; salary of bacteriologist, $900	$600 00	$800 00
Jul. 11	C. D. Welch, special work	$21 05	....
11	S. J. Crumbine, trip	38 82	....
13	Independent Telephone Company	....	$9 00
13	Missouri & Kansas Telephone Company	....	9 00
13	Postage	105 00	....
16	S. J. Crumbine, office-book	3 00	....
25	Supplies	11 50	....
31	S. E. Greenfield, supplies	8 45	....
31	Postage	....	25 00
Aug. 14	Postage and express	35 00	....
31	S. E. Greenfield, supplies	2 66	....
Sep. 7	S. J. Crumbine, trip	7 15	....
15	Postage	27 00	....
15	E. H. S. Bailey, meeting	2 65	....
15	C. H. Lerrigo, meeting	....	5 00
15	B. J. Alexander, meeting	....	12 50
15	E. P. Mills, meeting	....	9 70
15	J. B. Carver, meeting	....	23 00
15	L. A. Golden, meeting	....	35 30
15	G. E. Locke, meeting	....	9 10
15	A. B. Scott, meeting	....	38 00
24	C. D. Welch, meeting	....	24 00
29	S. E. Greenfield, supplies	6 90	....
Oct. 1	J. B. Carlile	....	25 35
5	W. J. V. Deacon, trip to Kansas City	8 30	....
5	E. H. S. Bailey, supplies	5 90	....
5	Independent Telephone Company	....	9 00
15	E. P. Mills, trip to Kansas City	....	9 35
17	S. J. Crumbine, trip	13 65	....
17	Postage	....	25 00
26	Missouri & Kansas Telephone Company	....	9 00
29	S. J. Crumbine, trip	11 40	....
31	S. E. Greenfield, supplies	4 47	....
Nov. 1	S. J. Crumbine, trip	....	11 75
2	Postage and express	....	15 16
2	Postage and express	42 22	....
10	F. O. Marvin, trip	9 02	....
10	S. J. Crumbine, trip	7 90	....
17	Postage and express	....	35 51
24	Supplies	9 50	....
28	Supplies	10 55	....
Dec. 14	Postage and express	35 94	....
14	E. H. S. Bailey, displays	13 38	....
21	S. E. Greenfield, supplies	10 50	....

FINANCIAL STATEMENT—CONCLUDED.

Item.		Special sanitary work.	Expenses of Board.
1906.			
Dec. 21	C. H. Lerrigo, trip	....	$10 80
21	S. J. Crumbine, trip	$7 22	....
26	J. T. Willard, meeting	1 35	....
26	E. H. S. Bailey, meeting	2 65	....
26	L. E. Sayre, meeting	1 55	....
26	C. D. Welch, meeting	....	24 00
26	G. E. Locke, meeting	....	9 65
26	A. B. Scott, meeting	....	36 50
26	H. M. Bentley, meeting	....	31 90
26	J. B. Carver, meeting	....	20 00
26	E. P. Mills, meeting	....	9 65
26	B. J. Alexander, meeting	....	15 60
26	A. B. Scott, trip	....	15 80
26	Postage	....	9 30
	Totals	$459 68	$522 92

VITAL STATISTICS.

COMPRISING RETURNS OF MARRIAGES, BIRTHS AND DEATHS,
ALSO
ANNUAL REPORTS OF COUNTY HEALTH OFFICERS.

REPORTS OF STATE INSTITUTIONS, 1906.

State Hospital, Osawatomie. Number of inmates, 1282. Number of deaths, 155, as follows: Carcinoma, 2; enteritis, 8; paresis, 16; senility, 17; erysipelas, 3; mania, 11; gangrene, 2; cerebral hemorrhage, 9; apoplexy, 5; hemiplegia, 1; neuritis, 1; tuberculosis, 26; paralysis, 2; ulcer of stomach, 1; epilepsy, 2; nephritis, 2; asthma, 2; otitis media, 1; heart lesion, 8; suicide, 7; cerebritis, 1; melancholia, 8; dementia, 7; cystitis, 1; encephaloma, 1; indigestion, 1; multiple sclerosis, 3; dysentery, 6; antero sclerosis, 1.—L. L. UHLS, M. D., *Superintendent.*

State Hospital, Topeka. Number of inmates, 1071. Number of deaths, 70, as follows: Tuberculosis, 10; peritonitis, 1; senile dementia, 8; exhaustion of chronic insanity, 10; exhaustion of adult chorea, 3; organic cardiac disease, 8; cerebral embolism, 1; pleurisy, 1; organic brain disease, 3; paresis, 13; pneumonia, 3; uræmia, 1; abscess of liver, 1; appendicitis, 1; acute delirious mania, 1; erysipelas, 1; epithelioma, 2; pyæmia, 1; bronchitis, 1.—T. C. BIDDLE, M. D., *Superintendent.*

State Hospital, Parsons. Number of inmates, 360. Number of deaths, 35, as follows: Epileptic exhaustion, 8; organic cardiac disease, 6; status epilepticus, 5; epileptic seizure, 3; paresis, 2; tuberculosis, 2; pneumonia, 2; peritonitis, 1; pericarditis, 1; multiple neuritis, 1; brain tumor, 1; typhoid fever, 1; suffocation, 1; chronic enteritis, 1.—M. L. PERRY, M. D., *Superintendent.*

Girls' Industrial School, Beloit. Number of inmates, 182. No deaths.—JULIA B. PERRY, *Superintendent.*

Boys' Industrial School, Topeka. Number of inmates, 227. Number of deaths, 1, from appendicitis.—H. W. CHARLES, *Superintendent.*

Soldiers' Orphans' Home, Atchison. Number of inmates, 159. No deaths.—E. L. HILLIS, *Superintendent.*

State School for the Blind, Kansas City. Number of inmates, 85. No deaths.—W. B. HALL, *Superintendent.*

Western Branch, National Home for Disabled Volunteer Soldiers, Leavenworth County. Number of inmates, 4059. Number of deaths, 12, from pulmonary tuberculosis.—J. L. FRYER, *Surgeon.*

State School for Feeble-minded Youth, Winfield. Number of inmates, 351. Number of deaths, 5, as follows: Senility, 1; epilepsy, 1; heart disease, 1; consumption, 1; Bright's disease, 1.—I. W. CLARK, *Superintendent.*

State Soldiers' Home, Fort Dodge. Number of inmates, 620. Number of deaths, 16, as follows: General paralysis, 1; senile gangrene, 2; empyema of gall bladder, 1; bronchial pneumonia, 1; chronic bronchitis, 1; diabetes mellitus, 2; cancer of the liver, 1; valvular disease of the heart, 1; cholera morbus, 1; pulmonary tuberculosis, 1; fever, 1; gastric enteritis, 1; hemiplegia, 1; accident, 1.—A. A. RAUB, M. D., *Superintendent.*

Total number of deaths occurring in state institutions for the year, 294, of which 50 were from tuberculosis, 6 from dysentery, and 1 from typhoid fever. There were 4 cases of typhoid fever reported during the year, 12 cases of dysentery, and 79 cases of tuberculosis.

TABLE No. 1.—RETURNS OF VITAL STATISTICS BY ASSESSORS FOR THE YEAR ENDING MARCH 1, 1905.

COUNTY.	MARRIAGES.			BIRTHS.					DEATHS.				
	Number	White	Colored	Number	Male	Female	White	Colored	Number	Male	Female	White	Colored
Allen	125	124	1	363	186	177	330	33	143	56	87	142	1
Anderson	51	46	5	215	108	107	207	9	57	33	24	56	1
Atchison	275	240	35	341	182	159	317	24	342	187	155	300	42
Barber	33	33	....	119	62	57	105	14	30	18	12	30	....
Barton	115	111	4	347	180	167	343	4	109	63	46	104	5
Bourbon	144	139	5	410	234	176	396	14	193	109	84	176	17
Brown	130	125	5	374	211	163	368	6	138	73	65	128	10
Butler	141	135	6	440	210	230	425	15	177	92	85	170	7
Chase	38	38	....	116	60	56	108	8	47	24	23	45	2
Chautauqua	64	63	1	218	111	107	211	7	64	31	33	62	2
Cherokee	196	194	2	608	310	298	591	17	240	133	107	229	11
Cheyenne	24	24	....	76	33	43	76	....	35	22	13	35	....
Clark	15	13	2	43	24	19	43	....	17	10	7	16	1
Clay	100	89	11	259	131	128	243	16	134	67	67	125	9
Cloud	100	100	....	340	160	180	335	5	117	55	62	117	....
Coffey	128	123	5	308	160	148	306	2	131	62	69	130	1
Comanche	18	16	2	39	21	18	39	....	17	12	5	17	....
Cowley	190	189	1	406	202	204	394	12	188	90	98	184	4
Crawford	160	157	3	641	321	320	626	15	156	90	66	153	3
Decatur	52	45	7	165	78	87	161	4	54	27	27	49	5
Dickinson	167	166	1	468	244	224	463	5	157	98	59	152	5
Doniphan	93	82	11	279	134	145	262	17	117	62	55	109	8
Douglas	93	89	4	362	185	177	324	38	244	117	127	188	56
Edwards	58	58	....	123	62	61	122	1	29	13	16	29	....
Elk	66	66	....	192	80	112	192	....	69	32	37	69	....
Ellis	74	67	7	343	190	153	332	11	109	60	49	109	....
Ellsworth	67	66	1	192	86	106	192	....	83	39	44	83	....
Finney	50	48	2	45	27	18	43	2	24	15	9	22	2
Ford	16	16	....	116	68	48	116	....	46	30	16	45	1
Franklin	59	57	2	145	80	65	137	8	69	29	40	64	5
Geary	85	82	3	198	95	103	194	4	33	18	15	32	1
Gove	20	19	1	97	48	49	97	....	19	12	7	19	....
Graham	47	38	9	139	73	66	125	14	53	25	28	38	15
Grant	2	2	....	4	3	1	4	....	3	......	3	3	....
Gray	11	11	....	31	10	21	31	....	4	2	2	4	....
Greeley	6	6	....	16	3	13	16	....	1	......	1	1	....
Greenwood	129	128	1	343	168	175	341	2	97	45	52	97	....
Hamilton	21	21	....	23	17	6	23	....	20	9	11	20	....
Harper	74	72	2	220	102	118	220	....	100	52	48	100	....
Harvey	83	81	2	303	151	152	297	6	100	49	51	98	2
Haskell	......	......	....	7	4	3	7	....	5	2	3	5	....
Hodgeman	7	7	....	61	33	28	57	4	27	15	12	24	3
Jackson	75	75	....	230	110	120	230	....	67	34	33	67	....
Jefferson	66	61	5	267	128	139	257	10	97	45	52	89	8
Jewell	71	69	2	251	120	131	251	....	70	39	31	67	13
Johnson	96	96	....	161	83	78	154	7	110	63	47	104	6
Kearny	9	9	....	20	9	11	20	....	8	4	4	8	....
Kingman	60	53	7	121	63	58	121	....	35	20	15	29	6
Kiowa	40	40	....	105	46	59	105	....	35	21	14	34	1
Labette	156	154	2	491	226	265	470	21	302	167	135	272	30
Lane	12	12	....	49	26	23	49	....	13	8	5	13	....
Leavenworth	237	210	27	597	321	276	546	51	262	148	114	217	45
Lincoln	44	43	1	203	88	115	203	....	46	28	18	46	....
Linn	124	122	2	271	131	140	261	10	87	44	43	79	8
Logan	21	21	....	64	30	34	61	3	12	6	6	12	....
Lyon	147	142	5	413	205	208	394	19	136	72	64	127	9
Marion	121	120	1	457	236	221	455	1	133	75	58	130	1
Marshall	99	95	4	370	190	180	366	4	129	66	63	126	3

TABLE No. 1 — Concluded.

County.	Marriages.			Births.					Deaths.				
	Number	White	Colored	Number	Male	Female	White	Colored	Number	Male	Female	White	Colored
McPherson	145	140	5	386	201	185	386	....	129	65	64	129	....
Meade	11	11	....	37	14	23	37	....	5	4	1	5	....
Miami	147	142	5	333	177	156	318	15	137	74	63	124	13
Mitchell	92	91	1	260	126	134	248	12	85	49	36	81	4
Montgomery	279	268	11	599	306	293	573	26	240	114	126	225	15
Morris	49	48	1	164	78	86	162	2	64	32	32	60	4
Morton	3	3	....	4	3	1	2	2	2	1	1	2	....
Nemaha	111	110	1	390	193	197	388	2	121	63	58	119	2
Neosho	121	121	....	293	165	128	287	6	145	75	70	139	6
Ness	22	22	....	95	55	40	95	....	36	14	22	36	....
Norton	64	64	....	205	108	97	205	....	57	33	24	57	....
Osage	86	85	1	302	145	157	300	2	123	63	60	116	7
Osborne	90	86	4	242	129	113	241	1	109	53	56	109	....
Ottawa	94	94	....	228	104	124	226	2	73	42	31	73	....
Pawnee	58	58	....	131	69	62	127	4	52	35	17	51	1
Phillips	94	83	11	275	129	146	274	1	74	42	32	67	7
Pottawatomie	70	69	1	247	140	107	244	3	58	34	24	57	1
Pratt	50	50	....	157	81	76	157	....	55	33	22	51	4
Rawlins	....	....	....	....	....	....	....	....	....	....	....	....	....
Reno	215	210	5	688	341	347	680	8	182	94	88	178	4
Republic	107	106	1	309	151	158	302	7	115	68	47	114	1
Rice	159	157	2	275	135	140	274	1	103	48	55	101	2
Riley	89	88	1	262	134	128	258	4	116	59	57	111	5
Rooks	74	73	1	256	120	136	252	4	72	41	31	71	1
Rush	62	62	....	200	101	99	200	....	55	32	23	54	1
Russell	50	49	1	176	96	80	174	2	48	23	25	48	....
Saline	60	59	1	571	147	124	266	5	71	35	36	68	3
Scott	8	8	....	39	22	17	39	....	17	8	9	17	....
Sedgwick	269	253	16	773	386	387	764	9	233	117	116	228	5
Seward	2	2	....	16	8	8	16	....	5	3	2	5	....
Shawnee	316	291	25	858	447	411	802	56	336	184	152	312	24
Sheridan	38	38	....	130	69	61	129	1	26	16	10	26	....
Sherman	11	9	2	45	28	17	45	....	12	6	6	12	....
Smith	99	99	....	315	150	165	315	....	82	41	41	82	....
Stafford	57	56	1	179	92	87	171	8	47	22	25	47	....
Stanton	3	3	....	8	4	4	8	....	3	1	2	3	....
Stevens	....	....	....	....	....	....	....	....	....	....	....	....	....
Sumner	156	155	1	451	243	208	447	4	193	105	88	191	2
Thomas	40	40	....	91	46	45	91	....	29	14	15	26	3
Trego	23	23	....	89	39	50	89	....	25	15	10	25	....
Wabaunsee	76	74	2	254	124	130	237	17	54	29	25	52	2
Wallace	9	9	....	20	7	13	20	....	10	6	4	10	....
Washington	117	116	1	328	176	152	318	10	106	55	51	106	....
Wichita	8	8	....	28	11	17	28	....	6	1	5	6	....
Wilson	148	148	....	342	171	171	341	1	119	62	57	117	2
Woodson	43	43	....	154	85	69	153	1	40	17	23	37	3
Wyandotte	364	315	49	1,316	655	661	1,181	135	481	286	195	420	61
Totals	8,884	8,537	347	25,826	13,070	12,756	25,032	794	9,491	5,032	4,459	8,949	542

TABLE No. 2.—RETURNS OF VITAL STATISTICS BY ASSESSORS FOR THE YEAR ENDING MARCH 1, 1906.

County.	Marriages.			Births.					Deaths.				
	Number.	White.	Colored.	Number.	Male.	Female.	White.	Colored.	Number.	Male.	Female.	White.	Colored.
Allen	258	243	15	555	274	281	534	21	202	111	91	196	6
Anderson	97	97	....	212	110	102	211	1	74	39	35	73	1
Atchison	324	323	1	251	136	115	232	19	243	117	126	203	40
Barber	59	59	....	121	72	49	120	1	40	20	20	39	1
Barton	114	112	2	392	197	195	383	9	80	41	39	76	4
Bourbon	141	135	6	322	167	155	292	30	192	119	73	184	8
Brown	120	120	....	368	182	186	361	7	97	52	45	91	6
Butler	107	107	....	288	138	150	288	....	110	59	51	109	1
Chase	50	50	....	126	68	58	124	2	51	29	22	48	3
Chautauqua	82	80	2	192	100	92	192	....	78	46	32	78	....
Cherokee	209	201	8	642	316	326	634	8	287	187	100	225	12
Cheyenne	26	25	1	67	38	29	64	3	24	14	10	24	....
Clark	16	16	....	51	32	19	51	....	11	5	6	11	....
Clay	96	95	1	251	133	118	249	2	116	68	48	114	2
Cloud	92	92	....	373	175	198	372	1	104	60	44	103	1
Coffey	77	76	1	206	102	104	205	1	103	38	65	101	2
Comanche	21	21	....	37	15	22	37	....	5	3	2	5	....
Cowley	187	184	3	448	225	223	445	3	185	102	83	180	5
Crawford	185	184	1	599	275	324	587	12	172	101	71	167	5
Decatur	50	50	....	187	96	91	187	....	40	21	19	40	....
Dickinson	163	160	3	467	258	209	467	....	130	63	67	130	....
Doniphan	97	90	7	230	123	107	222	8	85	55	30	82	3
Douglas	175	162	13	317	156	161	294	23	165	94	71	148	17
Edwards	62	62	....	138	74	64	138	....	66	32	34	65	1
Elk	91	91	....	193	102	91	193	....	59	38	21	59	....
Ellis	54	54	....	283	132	151	283	....	76	39	37	76	....
Ellsworth	78	76	2	206	114	92	204	2	69	36	33	67	2
Finney	4	4	....	34	15	19	34	....	6	3	3	6	....
Ford	72	72	....	142	75	67	142	....	80	48	32	80	....
Franklin	145	144	1	239	133	106	234	5	106	60	46	104	2
Geary	87	83	4	129	65	64	129	....	62	31	32	60	2
Gove	21	20	1	80	44	36	80	....	17	13	4	17	....
Graham	75	74	1	207	114	93	193	14	42	25	17	34	8
Grant	4	4	....	9	5	4	9	....	....	....	....	....	....
Gray	16	16	....	61	31	30	61	....	6	5	1	6	....
Greeley	1	1	....	12	5	7	12	....	6	1	5	6	....
Greenwood	79	76	3	256	128	128	255	1	91	53	38	91	....
Hamilton	29	29	....	60	31	29	60	....	23	14	9	23	....
Harper	87	87	....	255	143	112	254	1	71	38	33	70	1
Harvey	72	72	....	285	159	126	283	2	85	54	31	85	....
Haskell	5	5	....	8	7	1	8	....	2	1	1	2	....
Hodgeman	13	13	....	51	22	29	50	1	11	8	3	11	....
Jackson	82	81	1	251	109	142	249	2	61	32	29	61	....
Jefferson	83	81	2	217	110	107	213	4	78	43	35	77	1
Jewell	142	142	....	324	177	147	324	....	95	51	44	95	....
Johnson	99	99	....	229	121	108	227	2	95	56	39	89	6
Kearny	20	20	....	35	18	17	35	....	11	6	5	11	....
Kingman	73	73	....	148	68	80	148	....	52	27	25	52	....
Kiowa	20	20	....	65	36	29	65	....	13	7	6	13	....
Labette	114	113	1	374	195	179	351	23	216	133	83	196	20
Lane	24	24	....	63	28	35	63	....	11	3	8	11	....
Leavenworth	282	274	8	661	381	280	625	36	425	229	196	372	53
Lincoln	67	67	....	230	114	116	228	2	49	34	15	45	4
Linn	130	126	4	291	166	125	285	6	129	62	67	119	10
Logan	17	17	....	55	24	31	55	....	15	10	5	15	....
Lyon	112	112	....	373	205	168	366	7	118	71	47	114	4
Marion	180	180	....	428	218	210	428	....	144	75	69	144	....
Marshall	153	151	2	144	73	71	143	1	443	221	222	441	2

TABLE No. 2—CONCLUDED.

COUNTY.	MARRIAGES.			BIRTHS.					DEATHS.				
	Number....	White....	Colored....	Number....	Male....	Female....	White....	Colored....	Number....	Male....	Female....	White....	Colored....
McPherson	148	148	....	418	206	207	418	....	163	71	92	163	....
Meade	19	19	....	47	24	23	47	....	6	3	3	6	....
Miami	114	113	1	301	143	158	295	6	98	46	52	96	3
Mitchell	96	96	....	247	125	122	247	....	68	35	33	68	....
Montgomery	226	213	13	574	291	283	556	18	168	82	86	161	7
Morris	82	79	3	179	70	109	177	2	55	27	28	51	4
Morton	5	5	....	5	3	2	5	....	1	1	......	1	....
Nemaha	123	123	....	289	142	147	288	1	88	51	37	87	1
Neosho	168	159	9	389	194	195	383	6	163	94	69	154	9
Ness	30	30	....	96	51	45	96	....	31	18	13	31	....
Norton	72	72	....	185	89	96	183	2	39	23	16	39	....
Osage	123	122	1	353	156	197	348	5	102	48	54	99	3
Osborne	126	126	....	272	150	122	271	1	80	44	36	78	2
Ottawa	69	68	1	205	102	103	205	....	67	35	32	67	....
Pawnee	33	33	....	112	57	55	111	1	24	11	13	24	....
Phillips	119	119	....	302	154	148	284	18	78	44	34	77	1
Pottawatomie	96	95	1	318	163	155	318	....	104	56	48	103	1
Pratt	53	53	....	165	78	87	165	....	52	26	26	48	4
Rawlins	37	37	....	94	47	47	94	....	29	18	11	29	....
Reno	305	295	10	605	316	289	602	3	191	90	101	185	6
Republic	120	120	....	337	175	162	337	....	92	49	43	92	....
Rice	111	107	4	259	137	122	259	....	104	65	39	104	....
Riley	70	68	2	253	133	120	247	6	80	39	41	79	1
Rooks	77	76	1	241	110	131	240	1	61	30	31	60	1
Rush	57	57	....	165	89	76	165	....	43	23	20	43	....
Russell	73	72	1	182	90	92	181	1	48	23	25	48	....
Saline	101	101	....	263	125	138	260	3	96	62	34	94	2
Scott	16	16	....	46	30	16	46	....	2	2	......	2	....
Sedgwick	307	299	8	772	385	387	757	15	304	184	120	298	6
Seward	12	12	....	20	12	8	20	....	3	2	1	3	....
Shawnee	368	329	39	779	388	391	729	50	300	148	152	251	49
Sheridan	24	22	2	124	52	72	117	7	20	11	9	20	....
Sherman	26	26	....	85	55	30	85	....	22	11	11	22	....
Smith	142	142	....	340	173	167	340	....	79	38	41	79	....
Stafford	107	107	....	239	129	110	239	....	63	36	27	63	....
Stanton	1	1	....	12	8	4	12	....	4	2	2	4	....
Stevens	5	5	....	5	1	4	5	....	3	2	1	2	1
Sumner	154	153	1	316	151	165	316	....	130	79	51	130	....
Thomas	42	42	....	119	68	51	119	....	19	8	11	19	....
Trego	16	16	....	102	58	44	102	....	23	13	10	23	....
Wabaunsee	55	52	3	269	128	141	255	14	80	51	29	73	7
Wallace	9	9	....	25	10	15	25	....	9	6	3	9	....
Washington	109	109	....	358	197	161	358	....	100	53	47	100	....
Wichita	16	16	....	15	10	5	15	....	10	7	3	10	....
Wilson	84	84	....	264	131	133	264	....	60	29	31	60	....
Woodson	29	29	....	116	62	54	116	....	30	11	19	30	....
Wyandotte	436	392	44	1,270	625	645	1,145	125	518	282	231	437	76
Totals	9,960	9,722	238	25,365	12,923	12,442	24,820	545	9,272	5,012	4,260	8,865	407

TABLE No. 3.—SYNOPSIS OF REPORTS

County.	Population.	Health officer.	Address.	Communicable					
				Diphtheria.		Scarlet fever.		Smallpox.	
				Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Allen	30,163	H. L. Hendricks, M. D.	Iola	43	9	16	4	51	1
Anderson	13,007	D. M. Craig, M. D	Garnett	16	2	6	0	0	0
Atchison	30,028	C. H. Linley, M. D.	Atchison	10	1	4	0	23	0
Barber	7,186	C. D. Updegraff, M. D.	Medicine Lodge	0	0	8	1	5	0
Barton	15,898	O. P. McPherson, M. D.	Great Bend	8	2	23	2	10	0
Bourbon	25,872	R. Aikman, M. D.	Fort Scott	11	2	2	0	15	0
Brown	20,972	S. M. Pratt, M. D.	Hiawatha	30	5	7	0	39	0
Butler	22,540	C. E. Hunt, M. D.	El Dorado	34	4	5	1	15	1
Chase	7,562	F. T. Johnson, M. D	Cottonw'd Falls	....	....	....	....	....	..
Chautauqua	12,753	J. M. Ennis, M. D	Cedar Vale	36	6	44	3	42	0
Cherokee	39,947	Chas. S. Huffman, M. D.	Columbus	63	18	11	0	5	0
Cheyenne	3,268	J. O. Lamb, M. D.	St. Francis	0	0	8	2	63	0
Clark	2,239	W. F. Taylor, M. D.	Ashland	6	1	31	1	4	0
Clay	15,338	Sam E. Reynolds, M. D.	Clay Center	4	1	6	0	2	0
Cloud	18,417	A. R. Marcotte, M. D.	Concordia	10	1	6	0	14	0
Coffey	15,368	Wm. Manson, M. D.	Burlington	1	0	0	0	5	0
Comanche	2,002	J. S. Halliday, M. D	Coldwater	0	0	6	2	8	0
Cowley	32,171	Geo. B. Kessler, M. D	Winfield	10	7	5	4	42	1
Crawford	50,060	G. E. Cole, M. D	Girard	32	11	24	4	2	0
Decatur	10,460	Selden Miner, M. D	Oberlin	1	0	13	0	0	0
Dickinson	23,580	T. R. Conklin, M. D.	Abilene	11	6	8	0	7	0
Doniphan	13,565	W. W. Carter, M. D	Wathena	12	0	8	0	26	0
Douglas	25,374	A. W. Clark, M. D	Lawrence	158	14	8	0	1	0
Edwards	6,149	M. De Tar, M. D	Kinsley	16	2	21	2	0	0
Elk	10,179	W. F. Flack, M. D	Longton	31	3	4	0	31	0
Ellis	10,630	J. H. Middlekauff, M. D.	Hays	5	3	4	0	0	0
Ellsworth	9,635	H. O'Donnell, M. D	Ellsworth	6	0	4	0	8	0
Finney	4,613	Andrew Sabine, M. D.	Garden City	0	0	5	0	0	0
Ford	9,048	McCarty & McCarty, M. D.	Dodge City	1	0	4	0	16	0
Franklin	20,911	H. W. Wright, M. D	Ottawa	6	4	20	0	0	0
Geary	10,347	L. R. King, M. D.	Junction City	23	0	14	0	8	0
Gove	4,081	J. H. McNaughton, M. D.	Gove	0	0	20	0	1	0
Graham	7,412	A. H. Van Duyn, M. D.	Hill City	0	0	0	0	8	0
Grant	516	E. F. Towler	Ulysses	0	0	0	0	0	0
Gray	2,236	G. W. Hollembeak, M. D.	Cimarron	0	0	0	0	0	0
Greeley	989	....	....	....	....	....	....	....	..
Greenwood	15,207	Sherman L. Axford, M. D.	Virgil	62	4	13	1	2	0
Hamilton	1,749	R. M. Van Duzer, M. D.	Syracuse	0	0	0	0	0	0
Harper	12,079	A. D. Updegraff, M. D	Anthony	3	0	32	2	7	0
Harvey	17,130	J. W. Graybill, M. D.	Newton	7	1	30	1	8	0
Haskell	934	L. V. Miner, M. D	Santa Fe	0	0	0	0	0	0
Hodgeman	2,583	A. B. Scott, M. D	Jetmore	0	0	0	0	0	0
Jackson	16,409	E. W. Reed, M. D.	Holton	2	1	43	1	2	0
Jefferson	15,018	S. Johnston, M. D	Oskaloosa	7	1	16	0	2	0
Jewell	17,528	R. L. Duncanson, M. D.	Ionia	7	2	14	0	34	0
Johnson	16,297	H. H. Johnson, M. D.	Olathe	6	1	8	2	8	0
Kearny	1,455	G. F. Johnston, M. D	Lakin	0	0	0	0	7	0
Kingman	12,044	M. H. Haskins, M. D	Kingman	131	7	13	0	0	0
Kiowa	3,892	J. A. Gardner, M. D	Greensburg	0	0	0	0	4	0
Labette	33,628	R. M. Bennett, M. D	Mound Valley	28	7	6	0	0	0
Lane	2,644	J. H. Morgan, M. D.	Dighton	0	0	0	0	0	0
Leavenworth	40,353	J. L. Everhardy, M. D	Leavenworth	58	6	8	1	27	0
Lincoln	10,171	Alfred Hultner, M. D.	Lincoln	23	3	0	0	7	0
Linn	15,126	J. G. Wortman, M. D.	Mound City	13	5	0	0	1	0
Logan	3,176	J. W. Smith, M. D	Russell Springs	0	0	5	0	0	0
Lyon	25,509	J. M. Parrington, M. D.	Emporia	53	3	49	1	18	0
Marion	20,375	G. P. Marner, M. D.	Marion	40	5	23	4	0	0
Marshall	23,697	W. R. Breeding, M. D.	Marysville	20	5	57	1	0	0

FROM COUNTY HEALTH OFFICERS.

DISEASES, 1906.												Number of deaths from all causes.....	Total number of births..........	Salary of health officer.............	Expenses incurred by counties in controlling contagious diseases..............
Measles.		Typhoid fever.		Chicken-pox.		Cholera infantum.		Dysentery.		Consumption.					
Cases...	Deaths...	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..				
87	2	70	13	18	0	48	11	21	0	7	5	81	124	$222 00	....
0	0	2	2	0	0	0	0	0	0	5	5	54	....	240 00	....
1	0	1	1	0	0	0	0	0	0	14	13	73	98	....	....
1	1	1	1	10	0	0	0	0	0	2	1	40	12	120 00	....
10	0	85	0	6	0	7	2	2	0	5	5	116	159	....	....
0	0	12	8	17	0	17	8	9	2	29	23	311	225	120 00	....
1	0	4	0	0	0	0	0	3	0	10	10	47	28	750 00	$950 00
3	1	11	6	0	0	2	1	1	1	9	6	136	202	100 00	50 00
......	....	......	....	....	....	....	....	....	....	......	....	......	......	....	....
14	0	4	2	0	0	0	0	0	0	6	6	64	22	800 00	1,200 00
82	4	15	8	0	0	11	11	1	1	28	20	520	777	240 00	....
70	2	5	2	0	0	6	2	10	3	1	0	40	50	25 & fees.	....
0	0	2	1	0	0	2	1	0	0	4	1	17	30	30 00	....
0	0	4	2	0	0	0	0	0	0	9	9	156	76	83 30	125 00
7	0	9	1	0	0	8	1	1	0	1	1	34	43	....	....
0	0	17	6	0	0	10	9	0	0	20	15	178	163	75 00	60 00
0	0	1	1	0	0	0	0	10	0	0	0	18	40	25 00	80 00
11	4	10	10	0	0	0	0	0	0	24	20	332	81	Fees.	....
248	7	14	14	52	0	8	7	0	0	33	33	511	570	25 00	....
1	0	13	6	0	0	0	0	1	1	0	0	29	186	100 00	....
0	0	1	1	0	0	0	0	1	1	10	8	150	237	400 00	....
0	0	3	3	0	0	1	1	0	0	12	9	136	227	80 00	200 00
0	0	28	7	8	0	3	3	0	0	23	22	313	221	Fees.	....
0	0	22	5	2	0	1	0	26	7	10	4	47	....	40 00	178 00
0	0	1	1	0	0	0	0	0	0	4	4	57	144	75 00	200 00
0	0	2	2	4	0	1	0	0	0	1	1	26	141	100 00	....
0	0	20	3	30	0	10	0	30	0	6	6	101	227	Fees.	....
0	0	6	6	4	0	0	0	0	0	9	9	71	28	....	....
2	0	75	2	0	0	1	1	1	1	8	8	94	189	25 00	....
75	3	25	3	50	0	0	0	6	8	24	24	168	225	50 00	....
0	0	25	6	20	0	0	0	5	5	10	10	100	131	100 00	....
0	0	2	1	0	0	2	1	0	0	2	1	22	50	299 00	....
0	0	18	3	0	0	1	1	0	0	2	2	37	52	275 00	....
0	0	18	1	0	0	0	0	0	0	0	0	5	12	....	35 00
0	0	23	2	0	0	1	1	0	0	2	2	14	50	25 00	....
......	....	......	....	....	....	....	....	....	....	......	....	......	......	....	....
12	0	38	2	0	0	0	0	0	0	3	3	73	318	Fees.	325 00
0	0	1	0	0	0	0	0	2	0	1	0	8	32	25 00	....
39	2	4	4	0	0	1	1	0	0	6	5	69	88	100 00	....
0	0	11	3	0	0	0	0	4	4	9	9	109	172	300 00	35 00
0	0	8	2	7	0	3	3	0	0	0	0	15	22	....	....
0	0	18	0	8	0	0	0	12	0	0	0	15	74	300 00	....
3	0	10	3	0	0	0	0	0	0	14	13	109	214	400 00	....
0	0	1	1	0	0	2	2	0	0	2	2	19	130	296 00	....
0	0	5	2	0	0	30	5	10	1	6	2	58	72	50 00	200 00
2	0	10	3	0	0	0	0	0	0	2	1	143	113	60 00	100 00
0	0	35	1	0	0	7	2	3	0	1	1	5	22	35 00	....
8	0	13	6	0	0	2	2	0	0	7	7	85	58	100 00	200 00
0	0	0	0	0	0	0	0	0	0	1	1	19	110	44 00	22 00
11	1	5	2	0	0	1	1	0	0	11	11	126	188	100 & fees.	334 81
0	0	11	0	0	0	13	3	7	1	9	1	15	47	25 00	....
0	0	3	1	0	0	2	2	0	0	14	13	144	184	120 00	....
0	0	1	1	0	0	0	0	0	0	1	1	73	116	80 00	200 00
0	0	1	1	0	0	0	0	0	0	8	8	81	39	120 00	327 00
0	0	3	0	0	0	0	0	0	0	0	0	17	23	400 00	300 00
7	0	36	4	26	0	2	2	14	2	27	19	213	314	75 00	....
0	0	6	1	0	0	1	1	0	0	7	7	98	216	100 00	500 00
6	0	7	0	0	0	2	2	0	0	10	10	208	292	Fees.	340 00

TABLE No. 8—

COUNTY.	Population........	Health officer.	Address.	COMMUNICABLE					
				Diphtheria.		Scarlet fever.		Smallpox.	
				Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
McPherson	21,155	G. R. Dean, M. D..........	McPherson	2	0	47	0	0	0
Meade..........	2,574	W. F. Fee. M. D	Meade	6	1	0	0	0	0
Miami	20,062	L. A. Van Pelt, M. D.......	Paola	5	1	0	0	0	0
Mitchell	13,652	Mary J. Lobdell, M. D	Beloit.	18	6	3	1	6	0
Montgomery...	55,711	G. C. Chaney, M. D........	Independence...	68	9	7	0	201	1
Morris.........	11,904	W. E. Crawford, M. D....	Council Grove ..	32	5	29	0	1	0
Morton	211	A. T. Coffman, M. D......	Richfield	0	0	0	0	0	0
Nemaha	20,198	W. L. Carlyle, M. D.......	Sabetha..........	7	0	57	1	2	0
Neosho	23,414	U. G. Hoshlaw, M. D......	Chanute..........	15	1	6	3	1	0
Ness...........	5,515	C. Granville Egerton, M.D.	Ness City........	0	0	0	0	5	0
Norton	12,269	G. W. Bronson, M. D......	Almena..........	3	0	0	0	0	0
Osage..........	21,657	R. H. Miles, M. D..........	Lyndon..........	16	3	7	1	0	0
Osborne	12,981	A. C. Dillon, M. D..........	Osborne	9	1	9	0	12	0
Ottawa.........	10,976	G. W. Smith, M. D.........	Minneapolis	......	....	......	....	......	..
Pawnee	6,981	W. C. McCurdy, M. D.....	Larned	1	1	7	1	2	0
Phillips........	15,079	H. D. Brothers, M. D.	Agra............	3	0	12	0	0	0
Pottawatomie..	16,799	Wm. P. Wilson, M. D.....	Onaga..........	6	2	21	0	11	0
Pratt	8,186	J. I. Douthart, M. D	Pratt	2	0	25	2	60	0
Rawlins	6,027	L. G. Graves, M. D........	Atwood..........	7	3	17	0	3	0
Reno...........	32,672	C. Mayfield, M. D..........	Hutchinson.....	24	3	25	0	32	0
Republic'......	16,783	W. I. McFarland, M. D...	Belleville	65	4	23	0	81	0
Rice	14,044	C. J. Forney, M. D........	Lyons...........	3	1	10	1	0	0
Riley	13,591	J. D. Colt, M. D..........	Manhattan......	57	7	26	3	0	0
Rooks..........	10,483	W. B. Callender, M. D....	Stockton	2	0	6	0	0	0
Rush...........	6,848	W. H. Ferguson, M. D....	La Crosse.......	6	1	0	0	4	0
Russell	9,120	W. W. Bowlus, M. D......	Bunkerhill......	5	3	3	0	0	0
Saline..........	20,249	N. D. Tobey, M. D.	Salina	21	4	2	0	13	0
Scott...........	2,393	S. Scott Myers, M. D......	Scott............	0	0	1	0	0	0
Sedgwick......	54,555	G. K. Purves, M. D.......	Wichita.	38	5	22	3	267	0
Seward	1,493	Geo. S. Smith, M. D.......	Liberal.	0	0	6	0	2	0
Shawnee.......	58,855	D. T. Nicoll, M. D.........	Topeka.	49	2	36	3	2	0
Sheridan.......	5,309	F. A. Hall, M. D...........	Hoxie...........	0	0	40	0	20	0
Sherman.......	4,674	F. H. Smith, M. D.........	Goodland	0	0	0	0	0	0
Smith..........	16,367	B. W. Slagle, M. D........	Smith Center...	3	3	0	0	10	0
Stafford	10,719	J. P. H. Dykes, M. D......	Stafford.........	7	1	14	0	14	0
Stanton	385	....	....	......	....	......	....	......	..
Stevens........	741	S. S. Holloway, M. D......	Hugoton........	0	0	0	0	11	0
Sumner	25,576	L. F. Harmon, M. D.......	Wellington	35	6	30	0	30	0
Thomas........	5,531	V. C. Eddy, M. D.	Colby	0	0	12	0	9	0
Trego..........	3,879	A. B. Jones, M. D	Wa Keeney.....	7	5	9	0	0	0
Wabaunsee....	12,014	A. A. Meyer, M. D........	Alma	49	3	7	0	1	0
Wallace........	1,640	E. P. B. Wilder, M. D.....	Sharon Springs..	0	0	0	0	7	0
Washington....	20,167	W. M. Earnest, M. D......	Washington	1	1	33	4	7	0
Wichita........	1,781	O. E. Smith, M. D........	Leoti............	0	0	0	0	0	0
Wilson.........	19,261	F. M. Wiley, M. D........	Fredonia	70	6	0	0	36	0
Woodson.......	10,081	H. W. West, M. D.........	Yates Center....	5	1	1	0	17	0
Wyandotte	105,981	L. D. Mabie, M. D.........	Kansas City	22	3	1	0	4	0
CITIES:									
Atchison.....	....	C. H. Linley, M. D.........	....	11	1	8	0	37	0
Coffeyville...	....	Geo. F. Wollgast, M. D...	....	28	4	2	0	1	0
Kansas City..	....	E. J. Lutz, M. D...........	....	186	25	22	1	50	0
Leavenworth	....	Jos. F. Wallace, M. D.....	....	110	5	41	1	10	0
Parsons.......	....	C. F. Brady, M. D..........	....	16	4	21	1	0	0
Topeka	....	H. B. Hogeboom, M. D...	....	202	12	40	2	7	0
Wichita.......	....	....	....	......	....	......	....	......	..
Totals.....	....	....	....	2,256	296	1,340	68	1,554	4

CONCLUDED.

DISEASES, 1906.

Measles.		Typhoid fever.		Chicken-pox.		Cholera infantum.		Dysentery.		Consumption.		Number of deaths from all causes.....	Total number of births..........	Salary of health officer........	Expenses incurred by counties in controlling contagious diseases..........
Cases...	Deaths...	Cases...	Deaths...	Cases...	Deaths...	Cases...	Deaths...	Cases...	Deaths...	Cases...	Deaths...				
0	0	2	1	0	0	3	3	8	4	10	10	56	235	$550 00	....
0	0	10	4	14	0	6	1	12	0	6	4	29	60	100 00	$50 00
0	0	5	0	0	0	0	0	0	0	10	7	55	100	60 00	....
8	0	9	2	0	0	3	3	0	0	9	9	106	275	100 00	200 00
15	1	48	13	15	0	1	1	2	2	9	8	118	471	200 00	....
0	0	24	3	1	0	42	4	12	0	12	6	100	123	80 00	....
2	0	1	0	3	0	0	0	4	0	5	1	3	11	500 00	....
4	0	8	1	0	0	2	2	0	0	18	16	190	394	Fees.	300 00
109	5	14	3	0	0	1	1	0	0	9	9	88	166	200 00	400 00
0	0	5	1	17	0	0	0	0	0	9	3	19	63	150 00	65 00
0	0	18	8	0	0	5	5	0	0	3	3	80	149	60 00	....
11	1	13	6	0	0	1	1	2	2	16	16	200	251	50 00	162 00
0	0	3	1	0	0	1	1	0	0	7	2	101	92	200 00	....
......	....	......	....	....	....	....	....	....	....	......	....	....	....	....	....
0	0	5	2	0	0	2	1	0	0	4	4	56	143	....	....
0	0	18	6	40	0	0	0	6	2	12	10	120	222	150 00	....
1	0	7	1	0	0	0	0	0	0	9	1	73	374	500 00	....
24	0	28	2	0	0	3	1	0	0	10	6	68	45	50 00	250 00
213	1	5	1	0	0	2	0	2	0	9	0	56	68	40 & fees.	700 00
0	0	8	3	0	0	4	4	0	0	16	16	200	202	540 00	....
1	0	10	1	0	0	1	1	0	0	7	4	49	180	Fees.	....
19	0	16	3	0	0	15	5	10	4	16	4	69	77	50 00	100 00
98	1	12	2	40	0	6	1	12	2	4	3	138	165	85 00	250 00
0	0	4	4	0	0	0	0	0	0	5	3	74	226	20 00	50 00
6	0	4	4	0	0	0	0	0	0	6	3	75	120	12 00	150 00
0	0	2	1	0	0	0	0	0	0	0	0	47	56	100 00	200 00
0	0	5	5	0	0	5	5	0	0	12	9	178	200	125 00	....
3	0	0	0	0	0	1	1	0	0	2	0	7	48	25 00	....
108	0	20	8	10	0	18	14	10	10	40	26	640	....	1,000 00	2,000 00
0	0	0	0	0	0	0	0	0	0	1	1	14	21	50 00	....
0	0	6	0	1	0	0	0	1	0	5	3	27	26	....	150 00
10	0	5	2	0	0	5	1	0	0	1	1	19	60	144 00	....
0	0	11	1	0	0	2	2	0	0	4	4	40	105	200 00	43 00
0	0	7	7	0	0	4	4	5	4	10	10	66	....	40 00	40 00
4	4	22	3	0	0	0	0	8	8	8	6	98	156	100 00	....
......	....	......	....	....	....	....	....	....	....	......	....	....	....	....	....
0	0	0	0	0	0	0	0	0	0	2	2	13	16	50 00	....
4	0	11	5	22	0	32	8	20	7	17	16	119	200	100 & fees.	....
1	0	7	3	0	0	0	0	0	0	1	1	50	143	75 00	....
4	0	1	1	65	0	4	4	1	0	1	1	42	....	50 00	....
0	0	0	0	0	0	0	0	0	0	2	2	36	86	200 00	400 00
0	0	0	0	2	0	2	0	0	0	2	0	13	16	25 00	....
4	2	22	3	0	0	2	2	0	0	8	8	147	197	80 00	125 00
0	0	7	0	0	0	2	2	0	0	3	0	8	20	125 00	....
0	0	56	9	7	0	10	4	2	0	14	3	106	164	20 & fees.	....
0	0	8	3	0	0	4	4	0	0	9	8	101	132	50 & fees.	250 00
1	0	4	4	0	0	0	0	2	2	7	7	88	130	900 00	....
1	0	14	4	0	0	0	0	0	0	10	10	196	161	50 00	....
13	3	26	6	0	0	20	6	10	0	17	15	164	93	360 00	....
109	0	463	48	18	0	19	16	4	4	220	180	1,123	1,062	....	5,200 00
7	0	5	5	0	0	3	3	0	0	34	33	313	383	900 00	....
16	0	3	2	10	0	0	0	6	6	8	8	94	107	....	....
4	0	26	9	20	0	0	0	0	0	36	34	590	520	600 00	5,000 00
......	....	......	....	....	....	....	....	....	....	......	....	....	....	....	....
1,396	45	1,731	368	547	0	427	198	319	90	1,163	882	12,257	15,978	$16,170 00	$22,046 00

TABLE No. 4.—RETURNS OF DEATHS BY COUNTY HEALTH OFFICERS.

COUNTY.	GENERAL DISEASES.															
					Cancer and other mal. tumors.											
	Abscess	Addison's disease	Alcoholism, acute and chronic	Anæmia, chlorosis	Of the buccal cavity	Of the stomach and liver	Of the peritoneum, intestines, or rectum	Of the female genital organs	Of the breast	Of the skin	Of other organs and organs not specified	Other tumors (tumors of the female genitals excepted)	Cholera nostras	Croup	Diabetes	Dysentery
Allen													11		4	
Anderson			1		3											
Atchison	2					1										
Barber						1		1								
Barton													2			
Bourbon	2					3							8		1	2
Brown	1					3										
Butler			1					1	1		5		1		1	1
Chase																
Chautauqua	1			1										4		
Cherokee					1	1			2		10	1	11	5	4	1
Cheyenne						1							2	2		3
Clark						1							1			
Clay	1					2					2			1	3	
Cloud						2	4		1				1		2	
Coffey		1			4	1				1			9	1		
Comanche															1	
Cowley	3	1	1		10	5		1								
Crawford	2					8					6	4	7	3	1	
Decatur							1									1
Dickinson	1				1	5	1	4	1	1				1	3	1
Doniphan				1	1	6				1		3	1	2	1	
Douglas					1	3	4	2	2		7		8		1	
Edwards						1										7
Elk					1									1	1	
Ellis														2		
Ellsworth						4	2									
Finney						2	1									
Ford						1		1	1		1		1		2	1
Franklin				3		1					1			4	1	3
Geary						2			2		2					5
Gove						1							1			
Graham					1	1	1	1					1			
Grant																
Gray													1			
Greeley																
Greenwood	1				2			1								
Hamilton																
Harper	1			1		1		1					1			
Harvey	1	1		1		1			1		1					4
Haskell													8			
Hodgeman						1										
Jackson				1		2		1	1		4				1	
Jefferson							1						2	1		
Jewell					2								5		2	1
Johnson					3											
Kearny													2			

TABLE No. 4—Continued.

COUNTY.	GENERAL DISEASES.															
	Abscess	Addison's disease	Alcoholism, acute and chronic	Anæmia, chlorosis	Cancer and other mal. tumors.								Cholera nostras	Croup	Diabetes	Dysentery
					Of the buccal cavity	Of the stomach and liver	Of the peritoneum, intestines, or rectum	Of the female genital organs	Of the breast	Of the skin	Of other organs and organs not specified	Other tumors (tumors of the female genitals excepted)				
Kingman	2			2		1					1		2			
Kiowa																
Labette				1	5								1		1	
Lane			1		1							1	3			1
Leavenworth	2				1	2							2	1	2	
Lincoln	2		1			1					1			6		
Linn						2		2	1							
Logan																
Lyon						2					6		2			2
Marion			1		1	1		1					1	2		
Marshall			1	1		3			2		2		2	3	4	
McPherson													3		1	4
Meade						1							1			
Miami	2	1						2						1		
Mitchell			1			1					1		3			
Montgomery								1					1	4		2
Morris					1	2		1					4	1	3	
Morton																
Nemaha	2		2	1		5	4					1	2		3	
Neosho	1					1	2	1		1			1		1	
Ness																
Norton													5			
Osage	2					6						2	1	1	4	2
Osborne					1								1			
Ottawa																
Pawnee					5								1			
Phillips						2	2					3		1		2
Pottawatomie						2		1			2				2	
Pratt				1	1	1				1			1			
Rawlins	1			2										2		
Reno	1				16	2							4	1	1	
Republic													1			
Rice						1							5		1	4
Riley	1		1	1				3					1	1	1	2
Rooks			1			1	2					2				
Rush				1	1	3										
Russell			1											2	2	
Saline						3		1	2		5		5	1	3	
Scott			1			1							1			
Sedgwick	5		11	6	2	8	4	10	1			7	14	4	11	10
Seward	1				1				1							
Shawnee	1									1	1					
Sheridan													1		1	
Sherman	1				1		1						2			
Smith			2		2	1			1				4		3	4
Stafford						2									2	8
Stanton																

TABLE No. 4—CONTINUED.

COUNTY.	GENERAL DISEASES.															
	Abscess	Addison's disease	Alcoholism, acute and chronic	Anæmia, chlorosis	Cancer and other mal. tumors.								Cholera nostras	Croup	Diabetes	Dysentery
					Of the buccal cavity	Of the stomach and liver	Of the peritoneum, intestines, or rectum	Of the female genital organs	Of the breast	Of the skin	Of other organs and organs not specified	Other tumors (tumors of the female genitals excepted)				
Stevens	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Sumner	....	....	....	....	....	5	2	2	1	....	....	....	....	....	4	7
Thomas	....	....	....	....	....	....	....	....	....	....	....	....	8	....	1	....
Trego	....	....	....	....	....	4	....	....	....	....	2	....	....	2	....	....
Wabaunsee	....	....	....	....	....	....	....	....	....	....	....	....	4	....	2	....
Wallace	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Washington	....	....	....	....	3	4	1	2	2	2	....	....	....	2	....	....
Wichita	....	....	....	....	....	1	....	....	....	....	....	....	2	....	....	....
Wilson	2	....	....	....	....	....	....	....	....	....	4	....	2	1	1	....
Woodson	....	....	....	....	....	1	....	1	....	....	4	2	4	....	1	....
Wyandotte	....	....	....	....	....	1	....	....	....	....	....	....	4	....	2	2
CITIES:																
Atchison	2	....	....	1	4	8	....	....	....	....	....	....	....	8	1	....
Coffeyville	....	....	....	1	....	....	....	1	1	1	....	....	6	5	....	....
Kansas City	6	....	3	2	1	15	2	11	8	....	10	1	16	....	4	4
Leavenworth	....	....	1	1	....	11	1	8	1	1	....	....	8	....	1	....
Parsons	2	....	2	....	6	2	....	....	1	....	....	....	....	1	2	6
Topeka	....	....	2	5	1	9	2	1	1	....	12	....	....	....	2	....
Wichita	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Totals	52	4	85	34	84	172	38	58	30	10	90	27	198	72	96	90

TABLE No. 4—CONTINUED.

COUNTY.	GENERAL DISEASES.															
	Diphtheria	Erysipelas	Exophthalmic goiter	Influenza (la grippe)	Intermittent fever and malarial cachexia	Chronic poisonings	Other professional intoxications	Leukaemia	Measles	Membranous croup	Miliary fever	Mumps	Pott's disease	Purulent infection and septicemia	Recurrent fever	Rheumatism—acute, articular
Allen	9								2	8						
Anderson	2															
Atchison	1													2		
Barber									1							
Barton	2	1														2
Bourbon	2				4					1						2
Brown	5															
Butler	4			1					1	1						1
Chase																
Chautauqua	6															
Cherokee	18	8		3	10				4	12						1
Cheyenne									2	2						
Clark	1				1											
Clay	1			2										8		2
Cloud	1															
Coffey				2										1	4	1
Comanche		1									1			1		
Cowley	7								4	2						
Crawford	11	7		5	8		1		7	6						8
Decatur																
Dickinson	6															
Doniphan																
Douglas	14			5												1
Edwards	2															
Elk	8	1								2						
Ellis	8							1		1						1
Ellsworth		1														
Finney					1									2		
Ford		8		2				1						5		1
Franklin	4							1	8	4						
Geary		1														
Gove				1												
Graham														2		
Grant																
Gray																
Greeley																
Greenwood	4			1												
Hamilton																
Harper									2							
Harvey	1	1						1								1
Haskell																1
Hodgeman																
Jackson	1			1	1			1								
Jefferson	1			3												
Jewell	2															
Johnson	1				2											
Kearny																

TABLE No. 4—CONTINUED.

COUNTY.	GENERAL DISEASES.															
	Diphtheria	Erysipelas	Exophthalmic goiter	Influenza (la grippe)	Intermittent fever and malarial cachexia	Chronic poisoning	Other professional intoxications	Leukæmia	Measles	Membranous croup	Miliary fever	Mumps	Pott's disease	Purulent infection and septicæmia	Recurrent fever	Rheumatism—acute, articular
Kingman	7		1	2												1
Kiowa					1					1						
Labette	7								1	2						
Lane																
Leavenworth	6															1
Lincoln	3			1												
Linn	5									2						2
Logan																
Lyon	3							1		1	1					1
Marion	5			1						1						
Marshall	5	1		3										3		1
McPherson				1												
Meade	1															
Miami	1									1				1		
Mitchell	6	1														
Montgomery	9			5					1	1						
Morris	5	2								2					2	
Morton																
Nemaha			1							1						2
Neosho	1								5							1
Ness		1														
Norton																
Osage	3				2				1							
Osborne	1															
Ottawa																
Pawnee	1		2													
Phillips					1									1		
Pottawatomie	2	2														2
Pratt			1													
Rawlins	3								1							
Reno	3		1											1		2
Republic	4															
Rice	1							1								
Riley	7			8	1				1	2				1		2
Rooks				3				1								
Rush	1															
Russell	3									1	1					2
Saline	4			1								1				
Scott																
Sedgwick	5	2	1	10	1			2						15		11
Seward																
Shawnee	2												1			
Sheridan														1		
Sherman								1								
Smith	3			3						1				1		
Stafford	1			4					4							
Stanton																

TABLE No. 4—CONTINUED.

COUNTY.	GENERAL DISEASES.															
	Diphtheria	Erysipelas	Exophthalmic goiter	Influenza (la grippe)	Intermittent fever and malarial cachexia	Chronic poisonings	Other professional intoxications	Leukæmia	Measles	Membranous croup	Miliary fever	Mumps	Pott's disease	Purulent infection and septicæmia	Recurrent fever	Rheumatism—acute, articular
Stevens																
Sumner	6													5		
Thomas																
Trego	5			2	1											2
Wabaunsee	8															
Wallace																
Washington	1			1					2	1						
Wichita																
Wilson	6			1												
Woodson	1	1		2		2				1						
Wyandotte	3									1				2		
CITIES:																
Atchison	1				1									2		
Coffeyville	4				2				8	2				11		
Kansas City	25	5		1				1		7				18		1
Leavenworth	5	2		2	2					1				6		
Parsons	4	2											1	2		1
Topeka	12	8				1				4				6		2
Wichita																
Totals	296	41	7	72	34	3	1	12	45	67	8	1	2	87	6	51

TABLE No. 4—CONTINUED.

COUNTY.	GENERAL DISEASES.												NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.			
	Rheumatism—chronic, and gout	Scarlet fever	Scrofula	Smallpox	Syphilis	Tuberculosis of the larynx	Tuberculosis of the lungs	Tuberculosis of the meninges	Tuberculosis, abdominal	Typhoid fever	White swelling	Whooping-cough	Cerebral softening	Chorea	Other nervous diseases	Congestion and hemorrhage of the brain
Allen		4		1			5			18						
Anderson							5			2		4				
Atchison							13			1						
Barber		1					1			1		1				
Barton		2	1				5									2
Bourbon							22		1	8		8	1			9
Brown							10									
Butler	1	1		1	1	1	6		1	6		2				
Chase																
Chautauqua		8					6			2						
Cherokee	1				1	1	20	1		8		4	2		2	4
Cheyenne		2								2						
Clark		1					1			1			1			
Clay							9			2					1	
Cloud							1			1						
Coffey							15			6		2	2			
Comanche		2								1					1	
Cowley	2	4		1			20	1	3	10		1			1	
Crawford		4					33	8		14		11	1		4	
Decatur										6						
Dickinson							8			1		1		2		
Doniphan							9	1	1	3						2
Douglas					1		22	1		7		1				19
Edwards		2					4			5			1			
Elk							4			1						
Ellis							1			2						
Ellsworth							6			3		8				
Finney							9			6			2			
Ford							8			2		1				4
Franklin							24			3			1			
Geary							10			6						
Gove							1			1						
Graham							2			3						
Grant										1						
Gray							2			2						
Greeley																
Greenwood	1	1					3			2		6				
Hamilton																
Harper		2					5	1		4						
Harvey		1					9			8		3				
Haskell										2			1			
Hodgeman																
Jackson		1			1		13		1	3						2
Jefferson	1						2			1			1			
Jewell							2			2						
Johnson		2					1			3			3			
Kearny							1			1						

TABLE No. 4—CONTINUED.

COUNTY.	GENERAL DISEASES.												NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.			
	Rheumatism—chronic, and gout	Scarlet fever	Scrofula	Smallpox	Syphilis	Tuberculosis of the larynx	Tuberculosis of the lungs	Tuberculosis of the meninges	Tuberculosis, abdominal	Typhoid fever	White swelling	Whooping-cough	Cerebral softening	Chorea	Other nervous diseases	Congestion and hemorrhage of the brain
Kingman					1		7			6						2
Kiowa							1									1
Labette	2						11			2		2				5
Lane							1	1								
Leavenworth		1					13	1		1		1	1			
Lincoln							1			1		1				
Linn	2						8			1					1	
Logan																
Lyon		1					19			4		3	2			16
Marion	1	4					7	1		1						3
Marshall	1	1					10					1	2			4
McPherson							10			1						
Meade							4			4						
Miami							7									
Mitchell		1					9			2			1		1	1
Montgomery				1			8		4	12						
Morris	1						6		3	3						
Morton							1									
Nemaha		1					16		1	1		2	1			9
Neosho		3					9			3						
Ness	1						3			1						
Norton							3			8						
Osage		1					16			6					1	15
Osborne							2			1						
Ottawa																
Pawnee		1					4			2						
Phillips							10		1	6				1		
Pottawatomie							1			1					1	
Pratt		2					6			2		2				
Rawlins										1	1	2				5
Reno							16			3		3				
Republic							4			1						
Rice	1	1					4		2	3		1				
Riley		3			1		8			2		1				
Rooks							3			4		3				
Rush							3			4			1			2
Russell										1		1	1			
Saline	1				2		9	1	1	5		2				2
Scott																
Sedgwick	5	3			2		26	4	3	8			3		7	8
Seward							1									
Shawnee	3						3						1			
Sheridan							1			2			1			
Sherman							4			1		1				1
Smith	1						10			7				1		
Stafford	2						6			8		4				2
Stanton																

TABLE No. 4 — CONTINUED.

COUNTY.	GENERAL DISEASES.												NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.			
	Rheumatism—chronic, and gout.	Scarlet fever.	Scrofula.	Smallpox.	Syphilis.	Tuberculosis of the larynx.	Tuberculosis of the lungs.	Tuberculosis of the meninges.	Tuberculosis, abdominal.	Typhoid fever.	White swelling.	Whooping-cough.	Cerebral softening.	Chorea.	Other nervous diseases.	Congestion and hemorrhage of the brain.
Stevens	....	....	....	....	....	1	2	....	....	....	....	....	....	....	....	....
Sumner	....	....	....	....	....	4	16	....	....	5	....	....	....	....	....	2
Thomas	....	....	....	....	....	....	1	....	....	3	....	....	1	....	....	....
Trego	....	....	....	....	....	....	1	....	....	1	....	....	....	....	....	....
Wabaunsee	....	....	....	....	....	....	2	....	....	....	....	....	....	....	1	....
Wallace	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Washington	....	4	....	....	....	....	8	....	....	3	....	....	....	....	....	....
Wichita	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Wilson	....	....	....	....	....	....	3	....	....	9	....	....	8	....	....	....
Woodson	....	....	....	....	....	....	8	1	....	3	....	4	....	....	....	....
Wyandotte	1	....	....	....	....	....	7	....	....	4	....	1	....	....	....	....
CITIES:																
Atchison	....	....	....	....	1	....	10	....	....	4	....	....	....	....	1	....
Coffeyville	....	....	....	....	....	....	15	....	2	6	....	....	....	....	....	....
Kansas City	1	1	....	....	6	....	130	2	9	48	2	18	33	1	2	5
Leavenworth	....	1	....	....	3	....	33	....	1	5	1	2	1	....	....	16
Parsons	....	1	....	....	....	....	8	....	....	2	....	....	....	....	....	....
Topeka	....	2	1	....	....	1	34	1	3	9	....	2	1	....	2	28
Wichita	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Totals	26	68	2	4	20	8	882	20	37	368	4	100	74	5	26	164

TABLE No. 4—CONTINUED.

COUNTY.	NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.															
	Convulsions (not puerperal)	Convulsions of infants	Diseases of the eye and its adnexa	Diseases of the ear and its adnexa	Encephalitis	Epilepsy	General paralysis	Other forms of insanity	Meningitis— Simple	Cerebrospinal	Cerebral	Spinal	Paralysis without specific cause	Progressive locomotor ataxia	Other diseases of the spinal cord	Tetanus
Allen																
Anderson													1			
Atchison							2					1				
Barber																1
Barton						1	3					3	2			1
Bourbon		2							5	2		1	18	1		
Brown		8											2			
Butler		2											4			
Chase																
Chautauqua							2		2				2			
Cherokee	3					2	8		6			1			2	1
Cheyenne						2										
Clark	1															
Clay									3	1			6			
Cloud	1															
Coffey	1						8		1				9			1
Comanche										1						
Cowley	3				8	2			2	1		3	17	3		1
Crawford	4					1						1	18			
Decatur											1		1			
Dickinson		3					11									
Doniphan						2			2			1	5			
Douglas		2		2					1						1	
Edwards																
Elk									1							
Ellis													1			
Ellsworth		2							3	1			4			
Finney									1				1			
Ford										1						
Franklin							6	1								1
Geary							7									
Gove															1	
Graham																
Grant																
Gray							2									
Greeley																
Greenwood					1				1				2			
Hamilton																
Harper							5		1							
Harvey										1			1			
Haskell																
Hodgeman							2									
Jackson			1			1	5		1							
Jefferson																
Jewell																
Johnson		2				1				2						
Kearny																

TABLE No. 4—CONTINUED.

COUNTY.	NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.															
	Convulsions (not puerperal)	Convulsions of infants	Diseases of the eye and its adnexa	Diseases of the ear and its adnexa	Encephalitis	Epilepsy	General paralysis	Other forms of insanity	Meningitis—				Paralysis without specific cause	Progressive locomotor ataxia	Other diseases of the spinal cord	Tetanus
									Simple	Cerebrospinal	Cerebral	Spinal				
Kingman							1				1					
Kiowa							2									
Labette						1	8		8							1
Lane									1							
Leavenworth	1	2							1	1		2	7			
Lincoln			1			1	1									
Linn							3		1							
Logan											1					
Lyon				1			10		2	1					1	1
Marion	1						1						1			
Marshall		3								1			10			
McPherson							2		1			1				
Meade																
Miami																
Mitchell					1				1			3	5			
Montgomery						1	11									
Morris							1			1			1	1		
Morton																
Nemaha		2					3	1	4	2			1			1
Neosho							5		4							
Ness		1											1			
Norton																
Osage		1					8					1				
Osborne																
Ottawa																
Pawnee							2		2		2		2			
Phillips						1	2		1	1						
Pottawatomie													6			
Pratt		1					4	1								
Rawlins		2					3									
Reno	1									1			16			
Republic																
Rice		1							1				8			
Riley	1	1				1	1			1				1		1
Rooks												1	1			
Rush								1								
Russell							1						8			
Saline							12									2
Scott							1						1			
Sedgwick	3	5	4	2	2	1	2	1	6	5			5	2		2
Seward													1			
Shawnee						1						1				
Sheridan													1			
Sherman						1					1			1		1
Smith		1				1										
Stafford							2									
Stanton																

TABLE No. 4—CONTINUED.

COUNTY.	NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.															
	Convulsions (not puerperal)	Convulsions of infants	Diseases of the eye and its adnexa	Diseases of the ear and its adnexa	Encephalitis	Epilepsy	General paralysis	Other forms of insanity	Meningitis— Simple	Meningitis— Cerebrospinal	Meningitis— Cerebral	Meningitis— Spinal	Paralysis without specific cause	Progressive locomotor ataxia	Other diseases of the spinal cord	Tetanus
Stevens																
Sumner						1	7							1		2
Thomas										2			2			
Trego									1	1			1			
Wabaunsee																1
Wallace																
Washington		3					13			2						
Wichita																
Wilson								2					1			
Woodson							5								1	
Wyandotte	1						3									
CITIES:																
Atchison						1	8		4			2				
Coffeyville							3			4		1				
Kansas City	3	7			8	2	5	5	22	13		1	9	3		1
Leavenworth		6					1			2	2	8	13			1
Parsons						2										
Topeka		6				1	9	1	2		7	8	17	2	1	3
Wichita																
Totals	24	58	6	5	10	28	196	13	87	48	15	35	202	15	7	23

TABLE No. 4—CONTINUED.

COUNTY.	CIRCULATORY APPARATUS.									RESPIRATORY SYSTEM.						
	Affections of the arteries, atheroma, aneurism, etc.	Affections of the veins, varices, hemorrhoids, phlebitis	Affections of the lymphatic system, lymphangitis, etc.	Angina pectoris	Embolus and thrombosis	Endocarditis	Hemorrhages	Other diseases of the circulatory system	Organic heart diseases	Acute bronchitis	Affections of the larnyx	Asthma	Bronchopneumonia	Chronic bronchitis	Congestion of the lungs (including pulmonary apoplexy)	Diseases of the nasal fossae
Allen	1						2		7							
Anderson								7								
Atchison							1		6			1			3	
Barber									2							
Barton						2	1					1				
Bourbon							1		23	3					2	
Brown									1			1				
Butler						1		1	12						1	
Chase																
Chautauqua	1															
Cherokee		2				2	3		32	2	1	1			13	1
Cheyenne						3										
Clark																
Clay							1		13			2	3			
Cloud									3				2			
Coffey							1		16	3						
Comanche										1						
Cowley	3					1	1		29			1			2	
Crawford		1					1	32	1	4		10				
Decatur							2									
Dickinson	2	1					1		18			1				1
Doniphan				1		1	4		15	1						
Douglas				1	1			4	24	1				1		
Edwards						1	1	1								
Elk							2		2			1				
Ellis									2							
Ellsworth							9		10	1		1				
Finney																
Ford						1			7			1	1	1		
Franklin									12			1				
Geary							2		6			1				
Gove	1						1									
Graham	1								3							
Grant									1							
Gray																
Greeley																
Greenwood	1								5							
Hamilton										2						
Harper							1		12						1	
Harvey							1		1							
Haskell																
Hodgeman									3							
Jackson	1				2				7	1	1					
Jefferson																
Jewell	1															
Johnson	2					1		10								
Kearny																

TABLE No. 4 – CONTINUED.

COUNTY.	CIRCULATORY APPARATUS.									RESPIRATORY SYSTEM.						
	Affections of the arteries, atheroma, aneurism, etc.	Affections of the veins, varices, hemorrhoids, phlebitis	Affections of the lymphatic system, lymphangitis, etc.	Angina pectoris	Embolus and thrombosis	Endocarditis	Hemorrhages	Other diseases of the circulatory system	Organic heart diseases	Acute bronchitis	Affections of the larynx	Asthma	Bronchopneumonia	Chronic bronchitis	Congestion of the lungs (including pulmonary apoplexy)	Diseases of the nasal fossae
Kingman							1		8							
Kiowa									2							
Labette						1			11							
Lane																
Leavenworth	3						1	1	14	3						
Lincoln					1				4	1						
Linn							1		5		1					
Logan																
Lyon									26	1		2				
Marion						1			5	1			2	1		
Marshall									3	1	1		1	1		
McPherson				1					4				1			
Meade	1					2			1				1			
Miami						1			3				3			
Mitchell						1		1	2				1		1	
Montgomery	1						3		8						1	
Morris									4							
Morton					1				1							
Nemaha	5						3		14	1	2	1				
Neosho					1		1		9	1						
Ness								1	1							
Norton									5							
Osage							2		12	2			6			
Osborne									3							
Ottawa																
Pawnee	1			1				1	5			1				
Phillips							2		2							
Pottawatomie									8		1		2		1	
Pratt				1					3							
Rawlins				3		2			4							
Reno	1						1		12	3			1			
Republic					3											
Rice									4							
Riley	2				1	1	1		3	1		1	4	1		
Rooks									8							
Rush					1				6	4		1	2	2	2	
Russell							1		2	1					1	
Saline						3	2		12				1		2	
Scott																
Sedgwick	8	4	4	2	3	8	5	3	21		1	6	10	8	3	
Seward	1								2	2						
Shawnee									1							
Sheridan																
Sherman						2	1		1							
Smith				1						2						
Stafford		1		1					1			2	1			
Stanton																

TABLE No. 4 — CONTINUED.

COUNTY.	CIRCULATORY APPARATUS.									RESPIRATORY SYSTEM.						
	Affections of the arteries, atheroma, aneurism, etc.	Affections of the veins, varices, hemorrhoids, phlebitis	Affections of the lymphatic system, lymphangitis, etc.	Angina pectoris	Embolus and thrombosis	Endocarditis	Hemorrhages	Other diseases of the circulatory system	Organic heart disease	Acute bronchitis	Affections of the larynx	Asthma	Bronchopneumonia	Chronic bronchitis	Congestion of the lungs (including pulmonary apoplexy)	Diseases of the nasal fossæ
Stevens																
Sumner				4	2	4			5							
Thomas	1			1					2							
Trego									2			1				
Wabaunsee						3			4				2	1		
Wallace														1		
Washington				1				9		2						
Wichita																
Wilson						2			4	1						
Woodson	1			1					9	1			1			
Wyandotte	1						1		5	2						
CITIES:																
Atchison							2		7	1		2		1	1	
Coffeyville							8		4	1						
Kansas City				8	2	13	1	13	54	4	1	2			1	
Leavenworth				4		2	8		31			4	1			
Parsons									11				2			
Topeka				8		5			44	4	1	8		8	1	
Wichita																
Totals	40	9	4	29	18	64	71	84	695	59	10	49	48	21	36	2

TABLE No. 4—CONTINUED.

COUNTY.	RESPIRATORY SYSTEM.					DIGESTIVE APPARATUS.										
	Gangrene of the lung	Pleurisy	Pneumonia	Pulmonary emphysema	Other diseases of the respiratory apparatus (phthisis excepted)	Affections of the mouth and its adnexa	Affections of the pharynx	Affections of the esophagus	**Affections of the spleen**	Appendicitis and abscess of the iliac fossae	Biliary calculi	Other affections of the liver	Cirrhosis of the liver	**Diarrhea and enteritis (under five years)**	**Diarrhea and enteritis (over five years)**	**Hernia and intestinal obstructions**
Allen			6							2						
Anderson			1									3				
Atchison			4													1
Barber			2											5		
Barton			8													
Bourbon			30		1		1			2		1	1			2
Brown			6						1							
Butler			4				1			1	2		1		2	
Chase																
Chautauqua			7										2			2
Cherokee			35		4	1			1			3	1	6	3	
Cheyenne			1													
Clark			2													
Clay			11							4		1		5		
Cloud			1							2						
Coffey			12	1					1		1	1			1	
Comanche						1										
Cowley			21	1						4	3				8	8
Crawford			53		8					6		8	1	11		
Decatur			1							2			1		1	
Dickinson		1	13									2				1
Doniphan			10							1		1	1		1	8
Douglas			40			1				8		3		3		
Edwards			3											3		
Elk			6											2	2	
Ellis														1		
Ellsworth			4													
Finney			3											5		
Ford										1	2	1				
Franklin			16											4	1	
Geary			6							1				12		
Gove			2							8	1			2		
Graham			2											4		
Grant			2													
Gray																
Greeley																
Greenwood		1	10	1										1		
Hamilton			1											1		
Harper														2		
Harvey			9							2						1
Haskell																
Hodgeman			1							2						
Jackson			3										1	1		1
Jefferson			1										1			
Jewell			1													1
Johnson			8								2		4	10		
Kearny																

TABLE No. 4—CONTINUED.

COUNTY.	RESPIRATORY SYSTEM.					DIGESTIVE APPARATUS.										
	Gangrene of the lung	Pleurisy	Pneumonia	Pulmonary emphysema	Other diseases of the respiratory apparatus (phthisis excepted)	Affections of the mouth and its adnexa	Affections of the pharynx	Affections of the esophagus	Affections of the spleen	Appendicitis and abscess of the iliac fossæ	Biliary calculi	Other affections of the liver	Cirrhosis of the liver	Diarrhea and enteritis (under five years)	Diarrhea and enteritis (over five years)	Hernia and intestinal obstructions
Kingman			6							2				2		
Kiowa			4													
Labette			16		5								1			
Lane														3		
Leavenworth				15	3					1				3	2	1
Lincoln			8							2				4		
Linn			7							2				3	2	
Logan										1						
Lyon			22							1	1		1		3	1
Marion			10		1				1	1	1			2		2
Marshall			20							5	1			1	1	
McPherson			3						1	1	1					
Meade			2							1				3		
Miami			2							1				2	1	1
Mitchell				8								2				2
Montgomery			5									3	1		1	2
Morris			7							1			2	4		1
Morton																
Nemaha			14	1						1				4	2	3
Neosho			6							1			1	1		
Ness													2			
Norton			3													
Osage			20			1				2	1	3			1	
Osborne			4							4						
Ottawa																
Pawnee			1									1				
Phillips			5							2		1		4		
Pottawatomie			6			1				1	1	1		1		3
Pratt			4											1		
Rawlins			2													
Reno	1		7							4		1				
Republic										2						1
Rice			3			1				2				1	1	
Riley			2							4	2		1	4	1	1
Rooks			10								1					
Rush										1						
Russell			5							1			1			
Saline		2	17	1				1	2	3		1		2	2	1
Scott																
Sedgwick	2		15		3		1	2	3	19	5		6	18	8	4
Seward																
Shawnee			1													
Sheridan																
Sherman			2		1							1		1		
Smith			2							2			1	2	3	
Stafford			2							5						
Stanton																

TABLE No. 4—CONTINUED.

COUNTY.	RESPIRATORY SYSTEM.					DIGESTIVE APPARATUS.										
	Gangrene of the lung.	Pleurisy	Pneumonia	Pulmonary emphysema	Other diseases of the respiratory apparatus (phthisis excepted)	Affections of the mouth and its adnexa.	Affections of the pharynx	Affections of the esophagus	Affections of the spleen	Appendicitis and abscess of the iliac fossae	Biliary calculi	Other affections of the liver	Cirrhosis of the liver	Diarrhea and enteritis (under five years)	Diarrhea and enteritis (over five years)	Hernia and intestinal obstructions
Stevens	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Sumner	....	....	14	....	....	....	....	....	....	1	....	....	....	5	3	....
Thomas	....	....	6	....	....	....	....	....	....	1	1	....	....	5	....	....
Trego	....	....	3	....	....	....	....	....	....	....	....	....	....	4	....	....
Wabaunsee	....	....	....	....	....	....	....	....	....	1	....	....	....	....	2	....
Wallace	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Washington	....	....	9	....	....	....	....	....	....	1	....	....	1	2	3	....
Wichita	....	....	....	....	....	....	....	....	1	....	....	....	....	2	....	....
Wilson	....	....	10	....	1	....	....	....	....	1	....	....	....	....	1	1
Woodson	....	....	6	....	....	....	....	....	....	1	....	....	....	....	....	....
Wyandotte	....	....	8	....	....	....	....	....	....	1	....	....	....	....	....	1
CITIES:																
Atchison	....	....	17	....	1	....	....	....	....	1	....	....	....	....	....	....
Coffeyville	....	....	3	....	....	....	....	....	....	....	....	....	2	6	1	4
Kansas City	....	2	109	1	2	....	....	....	2	5	2	2	9	12	6	11
Leavenworth	....	....	18	....	....	....	....	....	....	2	....	....	2	7	6	1
Parsons	....	....	5	....	....	....	....	....	....	2	....	....	....	....	....	....
Topeka	....	1	59	....	....	1	....	....	....	8	1	3	2	10	2	3
Wichita	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Totals	3	7	861	29	30	7	8	3	13	139	29	43	47	197	66	59

TABLE No. 4—Continued.

County.	Digestive Apparatus.								Genito-urinary Apparatus and its Adnexa.							
	Other affections of the intestines	Hydatid tumor of the liver	Icterus gravis	Intestinal parasites	Peritonitis (not puerperal)	Other affections of the digestive apparatus (cancer and tubercle excepted)	Ulcer of the stomach	Other affections of the stomach (cancer excepted)	Acute nephritis	Bright's disease	Other diseases of the kidneys and their adnexa	Calculi of the urinary tract	Cysts and other tumors of the ovary	Other diseases of the female genital organs	Diseases of the bladder	Diseases of the prostate
Allen																
Anderson										3						
Atchison								3		2						
Barber																
Barton					2				2	1						
Bourbon	4				9		1	12		4	1					
Brown										1						
Butler	4				1		2	6	2	3						
Chase																
Chautauqua	1				1		2	6		2						
Cherokee			1		2	7		27	8	8	5			4	2	
Cheyenne					3											
Clark										3						
Clay					5					5						
Cloud																
Coffey					2	1	1	5		2	6					
Comanche										1						
Cowley	1			4	4		1	5	2	7					2	
Crawford	43				1			4		2	7					
Decatur										1						
Dickinson	4						1	2		5					1	1
Doniphan					1	1	1		1							
Douglas					1		1	1		14						
Edwards									1							
Elk								1		1						
Ellis										1						
Ellsworth					4											
Finney										1						
Ford								1	5						1	
Franklin					1			1	1	4	5					
Geary					1					6						
Gove									1	1						
Graham										1	2					
Grant					1											
Gray					1					1						
Greeley																
Greenwood						1				5						
Hamilton										1						
Harper	2									6						
Harvey	1			1	3		1	1	1	3	1	4				
Haskell																
Hodgeman																
Jackson	1				3	1		2	1	4						
Jefferson					1											
Jewell									8	2			1			
Johnson					2				10	9						
Kearny																

TABLE No. 4—CONTINUED.

COUNTY.	DIGESTIVE APPARATUS.								GENITO-URINARY APPARATUS AND ITS ADNEXA.							
	Other affections of the intestines	Hydatid tumor of the liver	Icterus gravis	Intestinal parasites	Peritonitis (not puerperal)	Other affections of the digestive apparatus (cancer and tubercle excepted)	Ulcer of the stomach	**Other affections of the stomach (cancer excepted)**	**Acute nephritis**	**Bright's disease**	Other diseases of the kidneys and their adnexa	Calculi of the urinary tract	Cysts and other tumors of the ovary	Other diseases of the female genital organs	Diseases of the bladder	**Diseases of the prostate**
Kingman			1		2				2	4						
Kiowa	2															
Labette										8			5			
Lane									1							
Leavenworth	1				2			8	2	4						1
Lincoln						2			1	2						
Linn	8				1					1						
Logan																
Lyon		1			1				1	7					1	
Marion	1				1		1	4	5	4						1
Marshall					1	4			2	3	1					
McPherson							1			1						
Meade										1						
Miami										2						
Mitchell					1	5		4		11	8					
Montgomery									2	1						
Morris										1						1
Morton																
Nemaha					2		1	8		6					1	1
Neosho							1	1		1				1		
Ness																
Norton					2											
Osage	5				2			7	3	3	1				1	1
Osborne					2			1		8					2	
Ottawa																
Pawnee						2										
Phillips					3				3	3	2				1	
Pottawatomie					3				1	1						
Pratt											2					
Rawlins							1		1	3						
Reno								1		10						
Republic									1							
Rice					1		1	1		2			1			
Riley					4		1		2	4		1	1			
Rooks										1					1	1
Rush					1					1					1	1
Russell							1			1	1				1	
Saline					8			2		6					1	
Scott																
Sedgwick	3	1	3		8	8	7	1	6	20	1		5	3	3	8
Seward										2						
Shawnee										4						
Sheridan			1							1						
Sherman										3						
Smith							1		1	2			1		1	
Stafford					1				4	2					1	
Stanton																

TABLE No. 4—Continued.

County.	Digestive Apparatus.								Genito-urinary Apparatus and its Adnexa.							
	Other affections of the intestines	Hydatid tumor of the liver	Icterus gravis	Intestinal parasites	Peritonitis (not puerperal)	Other affections of the digestive apparatus (cancer and tubercle excepted)	Ulcer of the stomach	Other affections of the stomach (cancer excepted)	Acute nephritis	Bright's disease	Other diseases of the kidneys and their adnexa	Calculi of the urinary tract	Cysts and other tumors of the ovary	Other diseases of the female genital organs	Diseases of the bladder	Diseases of the prostate
Stevens	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....
Sumner	....	....	....	....	5	....	....	....	1	1	....	....	....	....	2	....
Thomas	....	....	1	....	1	....	....	....	1	....	....	....	....	....	....	....
Trego	....	1	1	....	....	....	....	....	....	....	....	....	....	....	2	....
Wabaunsee	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Wallace	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1	....
Washington	....	....	....	....	1	....	....	....	2	6	....	....	....	....	....	....
Wichita	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Wilson	....	....	....	....	8	....	....	....	....	8	....	....	....	....	....	1
Woodson	....	....	....	1	1	....	....	4	....	4	....	....	....	....	....	....
Wyandotte	2	....	....	....	....	....	....	....	....	1	4	....	....	....	1	....
Cities:																
Atchison	....	....	....	....	....	....	....	7	....	10	....	....	....	....	2	....
Coffeyville	....	....	....	....	1	1	....	10	....	4	2	....	....	....	....	....
Kansas City	6	....	4	....	13	....	3	22	4	40	19	2	1	....	2	....
Leavenworth	....	....	....	....	2	....	3	3	....	14	....	....	....	....	2	....
Parsons	....	....	....	....	....	....	....	1	3	8	....	....	....	....	2	....
Topeka	4	....	2	....	15	....	....	25	5	21	11	....	....	1	....	1
Wichita	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Totals	93	8	14	6	137	28	33	177	87	342	74	7	15	9	35	18

TABLE No. 4—CONTINUED.

COUNTY.	GENITO-URINARY APPARATUS AND ITS ADNEXA.					THE PUERPERAL STATE.								SKIN AND CELLULAR TISSUE.		
	Metritis	Non-venereal diseases of the male genital organs	Uterine hemorrhage (not puerperal)	Uterine tumor (not cancer)	Other diseases of the uterus	Accidents of pregnancy	Puerperal hemorrhage	Other accidents of labor	Puerperal septicæmia	Puerperal albuminuria and convulsions	Phlegmasia alba dolens	Other accidents of pregnancy, sudden death	Puerperal diseases of the breast	Furuncle (carbuncle)	Gangrene	Phlegmon, warm abscess
Allen																
Anderson																
Atchison							1									
Barber																
Barton				1												
Bourbon									2						1	
Brown																
Butler				1		1			3			1				
Chase																
Chautauqua																
Cherokee		1					1	1	1			2	1		1	
Cheyenne																
Clark																
Clay																
Cloud				1	2											
Coffey	2							1						1		
Comanche																
Cowley				3				2	1	1					1	
Crawford								1							1	
Decatur					1				2							
Dickinson									2							
Doniphan																
Douglas															2	
Edwards																
Elk									1							
Ellis															1	
Ellsworth									2							
Finney																
Ford									3						1	
Franklin									3			1				
Geary								1	1						1	
Gove																
Graham																
Grant																
Gray																
Greeley																
Greenwood									3							
Hamilton																
Harper																
Harvey									4	1						
Haskell																
Hodgeman							1		1							
Jackson						1									1	
Jefferson							1									
Jewell															1	
Johnson			4			4			6							
Kearny																

TABLE No. 4 – CONTINUED.

COUNTY.	GENITO-URINARY APPARATUS AND ITS ADNEXA.					THE PUERPERAL STATE.								SKIN AND CELLULAR TISSUE.		
	Metritis	Non-venereal diseases of the male genital organs	Uterine hemorrhage (not puerperal)	Uterine tumor (not cancer)	Other diseases of the uterus	Accidents of pregnancy	Puerperal hemorrhage	Other accidents of labor	Puerperal septicemia	Puerperal albuminuria and convulsions	Phlegmasia alba dolens	Other accidents of pregnancy, sudden death	Puerperal diseases of the breast	Furuncle (carbuncle)	Gangrene	Phlegmon, warm abscess
Kingman										1						
Kiowa																
Labette																
Lane																
Leavenworth						1										
Lincoln									1							1
Linn						1										
Logan								1								
Lyon				2					5			1	1			
Marion									1							
Marshall				1						1		1				
McPherson																
Meade																1
Miami																
Mitchell																
Montgomery									2							
Morris				1				2								
Morton																
Nemaha									1						1	
Neosho				1		1	4		1			2			1	
Ness																
Norton															1	
Osage						3		1	1						1	
Osborne																
Ottawa																
Pawnee								1	1			1				
Phillips	1									1						
Pottawatomie							1									
Pratt									1							
Rawlins								3								
Reno									5							
Republic																
Rice															1	
Riley	1		1			1			1							
Rooks							1									
Rush						1									1	
Russell							1		1							
Saline				1		2			4							
Scott						1										
Sedgwick		2		8	1		2		8	2		3		1	2	2
Seward						1										
Shawnee									1							
Sheridan						1		2								
Sherman						1	1									
Smith								1	1		1					
Stafford						2										
Stanton																

TABLE No. 4—CONTINUED.

COUNTY.	GENITO-URINARY APPARATUS AND ITS ADNEXA.					THE PUERPERAL STATE.								SKIN AND CELLULAR TISSUE.		
	Metritis	Non-venereal diseases of the male genital organs	Uterine hemorrhage (not puerperal)	Uterine tumor (not cancer)	Other diseases of the uterus	Accidents of pregnancy	Puerperal hemorrhage	Other accidents of labor	Puerperal septicaemia	Puerperal albuminuria and convulsions	Phlegmasia alba dolens	Other accidents of pregnancy, sudden death	Puerperal diseases of the breast	Furuncle (carbuncle)	Gangrene	Phlegmon, warm abscess
Stevens																
Sumner																
Thomas												1		1		
Trego									1							
Wabaunsee										1						
Wallace																
Washington						1				1					1	
Wichita							1									
Wilson						1										
Woodson										1						
Wyandotte									2							
CITIES:																
Atchison									2							
Coffeyville								1		2						
Kansas City						2	1	1	17	1				1	2	
Leavenworth										1		1		1	1	
Parsons						2			1							
Topeka				1	1			1	9	1		1			1	
Wichita																
Totals	4	8	2	21	5	29	16	20	102	15	1	15	2	5	24	4

TABLE No. 4—CONTINUED.

COUNTY.	Other diseases of the skin and its adnexa (cancer excepted)	ORGANS OF LOC'MOTION.			MALFORMATIONS (congenital)	EARLY INFANCY.			OLD AGE—Senile debility	PRODUCED BY EXTERNAL CAUSES.						
		Affections of the bones	Amputation (for unspecified disease)	Other affections of the organs of locomotion		Congenital debility, jaundice and sclerema (premature birth)	Lack of care, malnutrition, etc.	Other diseases of infancy		Absorption of deleterious gases (suicide excepted)	Other acute poisonings	Accidental drowning	Burning.			Electrical disturbances
													Fire (burn)	Hot liquid (scald)	By corrosive substances	
Allen																
Anderson									14							
Atchison								4	3							
Barber								5	7							
Barton							1		6				2	1	1	
Bourbon						4		10	19	1	6		3			
Brown									1							
Butler						2		2	9			1	2	1	1	
Chase																
Chautauqua									2							
Cherokee						14	7	2	18		3	2	7			
Cheyenne																
Clark											1	1				
Clay									7				2			1
Cloud									3							
Coffey						2		2	9		1		1			
Comanche						1			2			1				
Cowley	2					12	3	1	39			2	2	1		1
Crawford								26	16	1	6	3	10	1		1
Decatur																
Dickinson		1				4		8	10				1			1
Doniphan					1	6			10			2	1			
Douglas						7			13	2		1	2			
Edwards								8	5				1			
Elk									3				1			
Ellis					1		3					2				
Ellsworth						4		7	23							
Finney									1		1		2			
Ford					1	6			8							
Franklin									14			1				
Geary									13			1				
Gove																
Graham							3		2			1	1			
Grant																
Gray								2	1					1		
Greeley																
Greenwood																
Hamilton																
Harper									3			1				
Harvey								2	2							
Haskell						1		3	1							
Hodgeman						2										
Jackson							1		4					1	1	
Jefferson								1								
Jewell									1			1		1		
Johnson						10			10			6				
Kearny																

TABLE No. 4—CONTINUED.

COUNTY.	Other diseases of the skin and its adnexa (cancer excepted)	ORGANS OF LOC'MOTION.			MALFORMATIONS (congenital)	EARLY INFANCY.			OLD AGE—Senile debility	PRODUCED BY EXTERNAL CAUSES.						
		Affections of the bones	Amputation (for unspecified disease)	Other affections of the organs of locomotion		Congenital debility, jaundice and sclerema (premature birth)	Lack of care, malnutrition, etc.	Other diseases of infancy		Absorption of deleterious gases (suicide excepted)	Other acute poisonings	Accidental drowning	Burning. Fire (burn)	Burning. Hot liquid (scald)	Burning. By corrosive substances	Electrical disturbances
Kingman					1	1	1		3							
Kiowa																
Labette								1	2			1				
Lane												1				
Leavenworth					1	7			10		1		2			
Lincoln									7			1	1			
Linn								2	4			2				
Logan									1							
Lyon					2	4			11			1	1	1		
Marion											8		1			
Marshall	1				5	4	1	7	11			1				1
McPherson									10				2			1
Meade									1		1					
Miami									5		1					
Mitchell									5			8	1			
Montgomery						1			2				1			
Morris							10	7	5							
Morton																
Nemaha									10	1	1			1		
Neosho								1	5					1		
Ness																
Norton									9		1	1				
Osage								2	16			2	1			
Osborne						1		4	4							
Ottawa																
Pawnee							1		8				1			
Phillips						4			6		1	8	1			
Pottawatomie						1	8		5					1		
Pratt									2							
Rawlins									13							
Reno						8			5			1				
Republic												1				
Rice						2		2	8							
Riley		1	1		8			4	5		1	1	2	1		
Rooks						16	8									
Rush					2											
Russell											2	1				
Saline						5	8		8		1	1	1			
Scott						1										
Sedgwick			2	4	1	19	5	8	17		2		1	1		2
Seward																1
Shawnee					1				1							
Sheridan									1							
Sherman							1		1							
Smith							1		2							
Stafford									8		1	1	1			
Stanton																

TABLE No. 4 — CONTINUED.

COUNTY.	Other diseases of the skin and its adnexa (cancer excepted)	ORGANS OF LOC'MOTION.			MALFORMATIONS (congenital)	EARLY INFANCY.			OLD AGE — Senile debility	PRODUCED BY EXTERNAL CAUSES.						
		Affections of the bones	Amputation (for unspecified disease)	Other affections of the organs of locomotion		Congenital debility, jaundice and sclerema (premature birth)	Lack of care, malnutrition, etc.	Other diseases of infancy		Absorption of deleterious gases (suicide excepted)	Other acute poisonings	Accidental drowning	Burning.			Electrical disturbances
													Fire (burn)	Hot liquid (scald)	By corrosive substances	
Stevens	....	....	....	....	....	1	1	2	1	....	....	....	1	....	....	....
Sumner	....	....	....	....	....	....	....	....	1	....	....	....	1	....	....	....
Thomas	....	....	....	....	1	8	2	1	....	....	2	....	....	....	....	....
Trego	....	....	....	....	....	....	....	....	4	....	....	....	....	....	....	....
Wabaunsee	....	....	....	....	....	....	....	1	2	....	1	....	....	....	....	....
Wallace	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Washington	....	....	....	....	....	2	....	....	18	....	....	2	8	....	....	....
Wichita	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Wilson	....	....	....	....	4	....	4	9	....	1	8	....	....	....	....	....
Woodson	....	....	....	....	1	1	....	6	2	....	....	....	....	....	....	....
Wyandotte	....	....	....	....	....	....	....	1	3	....	....	8	1	....	....	....
CITIES:																
Atchison	....	....	....	....	....	1	....	18	15	....	....	....	1	1	....	....
Coffeyville	....	....	....	....	....	5	17	....	9	....	....	2	4	....	....	....
Kansas City	....	....	....	....	5	1	82	87	22	....	1	11	18	1	4	....
Leavenworth	....	....	....	....	....	18	9	....	24	1	....	2	2	....	....	....
Parsons	....	....	....	....	....	....	....	....	4	....	....	....	1	....	....	....
Topeka	....	....	....	....	1	10	10	14	36	....	....	1	8	8	....	....
Wichita	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Totals	8	2	3	4	81	181	127	260	606	7	41	69	90	18	7	9

TABLE No. 4—CONTINUED.

COUNTY.	PRODUCED BY EXTERNAL CAUSES.															
	Fractures.				Freezing	Inanition	Other accidental injuries	Dystocia (child)	Electric shock	Falls	Gunshot	Mining accidents	Railroad accidents and injuries	Vehicles and horses	Other violence.	
	Of the skull	Of the femur	Of the vertebræ	Other fractures											Homicide	Other accidents
Allen										3	2					
Anderson						1							3			1
Atchison																
Barber																
Barton						2					2					
Bourbon						5					3		16			
Brown										1	1			1		
Butler																
Chase																
Chautauqua											2					
Cherokee						6					6	19	1	2		7
Cheyenne											1					
Clark											1					
Clay											2		1			
Cloud	1												1			
Coffey		1					2				4		1		1	2
Comanche																
Cowley				1		7	13				7				2	
Crawford	1					3	9				7	18	10	1	2	
Decatur						1						1				
Dickinson													1		7	
Doniphan									1		2					8
Douglas							3				1		7	3	2	
Edwards																
Elk						2										
Ellis																
Ellsworth		1											2			
Finney											2		2			
Ford		1		1							1		9	1		
Franklin													4		3	1
Geary											1			1	2	2
Gove											1			1		
Graham															1	
Grant																
Gray																
Greeley																
Greenwood																
Hamilton										1						
Harper	1															
Harvey						1							4			
Haskell														1		
Hodgeman														1	1	
Jackson		1									2					
Jefferson											1					
Jewell										1	1					2
Johnson													7			
Kearny														1		

TABLE No. 4—Continued.

County.	Produced by External Causes.															
	Fractures.				Freezing	Inanition	Other accidental injuries	Dystocia (child)	Electric shock	Falls	Gunshot	Mining accidents	Railroad accidents and injuries	Vehicles and horses	Other violence.	
	Of the skull	Of the femur	Of the vertebræ	Other fractures											Homicide	Other accidents
Kingman			2							2	1					
Kiowa																
Labette																
Lane																
Leavenworth			1								2					3
Lincoln											2					1
Linn						2										
Logan																
Lyon						8					2		3	1		1
Marion	1															
Marshall											2		1	2	1	4
McPherson	1															
Meade						1					1					
Miami	1												2			
Mitchell				1		2		4		1			1			
Montgomery							2						1		1	
Morris	2		1	1							1		3			
Morton																
Nemaha						6					2		1	1		
Neosho																
Ness	1															
Norton																
Osage						1					4		1	2		
Osborne																
Ottawa																
Pawnee	1												1			
Phillips						2					1		2	1		1
Pottawatomie	1															
Pratt							2									
Rawlins																
Reno		1								1			1			
Republic	2												2			
Rice																4
Riley	2						2				2		2		1	
Rooks																
Rush											8				2	
Russell									1	1						
Saline						8				3	1		1			
Scott																
Sedgwick	4		1	1		3				2	8		4	1	4	13
Seward																
Shawnee	1															
Sheridan											1					1
Sherman						1								1		
Smith																
Stafford											1					
Stanton																

TABLE No. 4—CONTINUED.

COUNTY.	PRODUCED BY EXTERNAL CAUSES.															
	Fractures.				Freezing	Inanition	Other accidental injuries	Dystocia (child)	Electric shock	Falls	Gunshot	Mining accidents	Railroad accidents and injuries	Vehicles and horses	Other violence.	
	Of the skull	Of the femur	Of the vertebræ	Other fractures											Homicide	Other accidents
Stevens							1			1	1					
Sumner																
Thomas											1					
Trego																
Wabaunsee																
Wallace					1										1	
Washington						1					2		2		1	
Wichita	1															
Wilson										1		1	4	1	2	1
Woodson						2							1			
Wyandotte						8					1		2			2
CITIES:																
Atchison				1						1	1		3			3
Coffeyville											1		2		2	
Kansas City	12		3			8					15		19			3
Leavenworth										1			5		5	
Parsons													1			
Topeka							2			6	4	1	11	1		
Wichita																
Totals	33	5	8	6	1	71	36	4	2	26	105	40	145	24	41	5

TABLE No. 4—CONTINUED.

COUNTY.	PRODUCED BY EXTERNAL CAUSES.										ILL-DEFINED.			TOTAL NUMBER OF DEATHS.
	Suicide by poison	Suicide by asphyxia	Suicide by hanging or strangulation	Suicide by drowning	Suicide by firearms	Suicide by cutting instruments	Suicide by precipitation from a height	Suicide by crushing	Suicide by other methods	Sunstroke (insolation)	Dropsy	Sudden death (not puerperal)	Unspecified or ill-defined causes	
Allen	2	2			1				1					81
Anderson													3	54
Atchison											2		19	78
Barber	1												10	40
Barton					1						8		52	116
Bourbon	2										8		35	311
Brown						1					3		5	47
Butler													23	136
Chase														
Chautauqua					1						2		4	64
Cherokee											12	1	91	520
Cheyenne												2	12	40
Clark														17
Clay										1	2		51	156
Cloud											1	2	1	34
Coffey									2		4	7	16	178
Comanche			1									1		18
Cowley	1										8		12	332
Crawford			1						8		7	15	7	511
Decatur	1												5	29
Dickinson	1												8	150
Doniphan					1						1		23	136
Douglas	4		1								8		53	313
Enwards						1								47
Elk													18	57
Ellis													3	26
Ellsworth											8		1	101
Finney			1										28	71
Ford									1				8	94
Franklin			1								5	1	27	168
Geary										1	1		5	100
Gove	1												1	22
Graham			1										3	37
Grant														5
Gray											1			14
Greeley														
Greenwood											2		17	78
Hamilton													2	8
Harper			1										14	69
Harvey					1						2		30	109
Haskell											1	1		15
Hodgeman														15
Jackson											1	4	19	109
Jefferson														19
Jewell													25	58
Johnson	2												24	143
Kearny														5

TABLE No. 4—CONTINUED.

COUNTY.	PRODUCED BY EXTERNAL CAUSES.										ILL-DEFINED.			TOTAL NUMBER OF DEATHS.
	Suicide by poison.	Suicide by asphyxia.	Suicide by hanging or strangulation.	Suicide by drowning.	Suicide by firearms.	Suicide by cutting instruments.	Suicide by precipitation from a height.	Suicide by crushing.	Suicide by other methods.	Sunstroke (insolation).	Dropsy.	Sudden death (not puerperal).	Unspecified or ill-defined causes.	
Kingman	1												7	85
Kiowa													5	19
Labette											1		26	126
Lane														15
Leavenworth					1						1		6	144
Lincoln	1												9	73
Linn											8		5	81
Logan													18	17
Lyon	1								1		8		21	213
Marion											13			98
Marshall			1		1	2				1	11	14	24	208
McPherson	1										3			56
Meade													1	29
Miami											2	1	11	55
Mitchell	2										2		4	106
Montgomery					1							8	14	118
Morris					1			1			8	1		100
Morton														3
Nemaha			1								6		24	190
Neosho	1										1			83
Ness											2		4	19
Norton											2		40	80
Osage			3								8		8	200
Osborne					1								66	101
Ottawa														
Pawnee	1						1			1	1		5	56
Phillips	2										8		28	120
Pottawatomie			1										7	73
Pratt											2		26	68
Rawlins													1	56
Reno	1								1		6		61	200
Republic													27	49
Rice											2		2	69
Riley	2		1		1						4	2	8	138
Rooks				1							7	1	1	74
Rush						1					2	4	19	75
Russell		1									1	1	2	47
Saline									1				6	178
Scott														7
Sedgwick	2			1	8						5	1	5	640
Seward														14
Shawnee												2		27
Sheridan											1		2	19
Sherman													5	40
Smith											1			66
Stafford											8	2	19	98
Stanton														

TABLE No. 4 – CONCLUDED.

COUNTY.	PRODUCED BY EXTERNAL CAUSES.										ILL-DEFINED.			TOTAL NUMBER OF DEATHS
	Suicide by poison	Suicide by asphyxia	Suicide by hanging or strangulation	Suicide by drowning	Suicide by firearms	Suicide by cutting instruments	Suicide by precipitation from a height	Suicide by crushing	Suicide by other methods	Sunstroke (insolation)	Dropsy	Sudden death (not puerperal)	Unspecified or ill-defined causes	
Stevens	....	....	....	....	....	....	....	....	....	....	....	....	....	13
Sumner	....	....	....	....	....	....	....	....	....	....	....	....	....	119
Thomas	....	....	....	....	....	....	....	....	....	....	....	....	....	50
Trego	....	....	....	....	....	....	....	....	....	....	....	....	4	42
Wabaunsee	....	....	....	....	....	....	....	....	....	....	1	....	....	36
Wallace	....	....	....	....	....	....	....	....	....	....	....	....	8	13
Washington	....	....	....	....	....	....	....	....	....	....	10	....	17	147
Wichita	....	....	....	....	....	....	....	....	....	....	....	....	....	8
Wilson	....	....	....	....	1	....	....	....	....	....	....	....	....	106
Woodson	....	....	....	....	....	....	....	....	....	....	1	....	14	101
Wyandotte	1	....	....	....	....	....	....	....	....	....	5	....	....	88
CITIES:														
Atchison	1	....	....	....	1	....	....	....	1	....	6	....	39	196
Coffeyville	....	....	....	....	5	....	....	....	....	....	4	....	....	164
Kansas City	1	....	....	6	....	....	....	1	....	1	8	2	1	1,123
Leavenworth	2	....	....	....	2	....	....	1	....	....	....	....	....	313
Parsons	3	....	1	....	3	....	....	....	....	....	2	....	2	94
Topeka	8	....	....	....	....	1	....	....	2	....	15	....	13	590
Wichita	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Totals	51	3	15	8	26	6	1	3	13	5	238	68	1,265	12,257

TABLE No. 5.—OCCUPATIONS OF THE DECEASED.

COUNTY.	Attorneys	Bakers	Blacksmiths	Bookbinders	Bookkeepers and clerks	Bricklayers	Butchers	Carpenters	Cigar-makers	Drivers	Druggists	Editors and writers	Electrical workers	Engineers	Engravers and artists	Farmers	Firemen
Allen																	
Anderson			1													26	
Atchison																13	
Barber			1											1		6	
Barton	1							1		1						22	
Bourbon																	
Brown		1														8	
Butler																21	
Chase																	
Chautauqua																15	
Cherokee		1					1	1						1		30	
Cheyenne																40	
Clark			1													3	
Clay								1								30	
Cloud																4	
Coffey																	
Comanche																6	
Cowley		1			2	1		1								17	
Crawford								2						2		34	
Decatur								1								1	
Dickinson	1						1									24	
Doniphan			1					1								23	
Douglas			1		2			3		3			1			34	
Edwards					1						1		1	1		7	
Elk																6	
Ellis																	
Ellsworth	1										1					22	
Finney														1		15	
Ford		1	1					1								13	
Franklin																22	
Geary																20	
Gove																4	
Graham																6	
Grant																5	
Gray							1									5	
Greeley																	
Greenwood			1					1								8	
Hamilton																2	
Harper										1						13	
Harvey	1							3								10	
Haskell																	
Hodgeman																2	
Jackson	1				1			2								27	
Jefferson																	
Jewell																	
Johnson																	
Kearny																1	
Kingman								1								23	
Kiowa																3	
Labette							1	1			2					14	
Lane														1		1	
Leavenworth																33	
Lincoln			1													18	
Linn																22	
Logan																3	
Lyon																11	
Marion						1		1								24	

TABLE No. 5—CONTINUED.

COUNTY.	Attorneys	Bakers	Blacksmiths	Bookbinders	Bookkeepers and clerks	Bricklayers	Butchers	Carpenters	Cigar-makers	Drivers	Druggists	Editors and writers	Electrical workers	Engineers	Engravers and artists	Farmers	Firemen
Marshall			1		1		1	1								59	
McPherson																10	
Meade						1										7	
Miami	1															5	
Mitchell											2					23	
Montgomery								4		4		1		1		10	10
Morris											1			2		29	1
Morton																	
Nemaha							2									52	
Neosho							1									12	
Ness																4	
Norton																	
Osage		1					1									36	
Osborne																10	
Ottawa																	
Pawnee														1		5	
Phillips			1					1								25	
Pottawatomie								2				1				8	
Pratt																33	
Rawlins																9	
Reno								1								15	
Republic																10	
Rice												1				14	
Riley		1	1		2			1					1	2		11	
Rooks																8	
Rush							1	1								40	
Russell			1		2			1								8	
Saline				1	1			2		2	2					49	
Scott																2	
Sedgwick	2	1	1		38	6	10	14	1	8	1	4	5	6	8	22	3
Seward							1									5	
Shawnee																2	
Sheridan																	
Sherman																5	1
Smith					2			1								24	
Stafford																16	
Stanton																	
Stevens																2	
Sumner					4	2					1			2		14	3
Thomas																6	
Trego																5	
Wabaunsee					1			2								4	
Wallace																4	
Washington	1				1												
Wichita																1	
Wilson								1		1						20	
Woodson																7	
Wyandotte					1											17	
CITIES:																	
Atchison		1	1		1			2	1	3						8	
Coffeyville																	
Kansas City	2		3	1	12	6	4	15	1	6	3		1	9	2	24	3
Leavenworth	1		3		5		2	2		5	2	1		1		15	
Parsons																6	
Topeka	7		2	1	11	2	1	14		3	2		1			33	
Wichita																	
Totals	19	7	22	3	88	19	28	86	3	32	18	8	10	31	10	1,436	21

Table No. 5—Continued.

County.	Housewives	Insurance agents	Jewelers and watchmakers	Laborers	Laundry employees	Linemen	Liquor dealers	Machinists	Merchants	Miners	Ministers	Molders	Nurses	Oil- and gas-well workers	Painters	Paper-hangers	Planing-mill workers	Physicians
Allen																		
Anderson	12								1									
Atchison	18			1		1												
Barber	5												1					3
Barton	27			4					1									
Bourbon																		
Brown	8			1														
Butler	18			6				2										
Chase																		
Chautauqua	6			1														2
Cherokee	56			5		1		1	1	40	2				1			2
Cheyenne																		
Clark	3																	
Clay	16			3									1					1
Cloud	14	1							4									
Coffey																		
Comanche																		
Cowley	20			7		1			1	2								
Crawford	52	1		8					4	52								4
Decatur	3			1					2						1			
Dickinson	23										1							
Doniphan	7			1		1												
Douglas	67			9	1				2									1
Edwards	12			2														
Elk	9			2														
Ellis	4																	
Ellsworth	18			4	1			1	2									
Finney	12			10					1									
Ford	20			8														
Franklin	46			19					2									
Geary	30			11														1
Gove	3			3														
Graham	7			3					1									1
Grant																		
Gray	1																	
Greeley																		
Greenwood	17			2														
Hamilton				1														
Harper	14			2					1						1			
Harvey	10			5					2						1			1
Haskell	4																	
Hodgeman	6			1					1									
Jackson	25			1				1	1		1							
Jefferson																		
Jewell																		
Johnson																		
Kearny	1																	
Kingman	32								3	1	1				1			
Kiowa	3			1				1										
Labette	31		1	6						1	1							
Lane	2																	
Leavenworth	36			4														
Lincoln	9			1											1			
Linn	25			7														
Logan									1									
Lyon	7			1														
Marion	24			7				1	1									1

TABLE No. 5—Continued.

County.	Housewives	Insurance agents	Jewelers and watchmakers	Laborers	Laundry employees	Linemen	Liquor dealers	Machinists	Merchants	Miners	Ministers	Molders	Nurses	Oil- and gas-well workers	Painters	Paper-hangers	Planing-mill workers	Physicians
Marshall	38			4			1		9		1							
McPherson	5																	
Meade	4			1	1													
Miami	10			8										2				1
Mitchell	27			2					1		2							
Montgomery	25	1		13	1			4	2		1			1				1
Morris	15			10														
Morton																		
Nemaha	40			4					7						1			2
Neosho	13			2														1
Ness																		
Norton																		
Osage	70			16					4	10								2
Osborne	6								2									
Ottawa																		
Pawnee	23								1						1			
Phillips	18	1		3				1			1		1		2			2
Pottawatomie	21			4					2									
Pratt	17								1									
Rawlins	7	1		12														
Reno	8		1	14				1	4									2
Republic	19			3														
Rice	9			2				1			1							
Riley	36			20	1	1			2						1	1		
Rooks	31			1					1									
Rush	20			4														
Russell	12			4			1											
Saline	46			6					1						1			
Scott	2																	
Sedgwick	158	1	4	43	2	1	1	10	11				1		6	2		2
Seward	6														1			
Shawnee	6			9														
Sheridan																		
Sherman	10										1							
Smith	16														1			
Stafford	6																	1
Stanton																		
Stevens	3																	1
Sumner	18			12		1		3	2						1	1		1
Thomas	5																	
Trego	6			1														
Wabaunsee	8	1		1														
Wallace		1		1														
Washington				12					2									
Wichita,		1																
Wilson	82			12					5		1			2		1		1
Woodson	7								2		1				1			1
Wyandotte	22			12														
CITIES:																		
Atchison	29			9			1		3		1				1			1
Coffeyville																		
Kansas City	224	4		226	1		3	5	23		6	3	2		4		1	2
Leavenworth,	75		2	36	1		2	2	20	8								2
Parsons	11			9														
Topeka	134	3		54				10	13		2	1		3	3	1		1
Wichita																		
Totals	2,056	16	8	718	9	7	9	44	150	114	24	4	6	8	30	6	1	41

TABLE No. 5—CONTINUED.

COUNTY.	Policemen	Printers and pressmen	Real-estate agents	Seamstresses	Steam-railway employees (office)	Steam-railway employees (operating department)	Stockmen	Street-railway employees	Shoemakers	Stenographers	Stone- and marble-cutters	Servants	Tailors	Tinners	Teachers	Not specified	Totals
Allen																81	81
Anderson																14	54
Atchison																45	73
Barber																23	40
Barton							1									58	116
Bourbon																311	311
Brown				1												28	47
Butler				1												88	136
Chase																......	......
Chautauqua																40	64
Cherokee						2			1			1			2	371	520
Cheyenne																......	40
Clark																10	17
Clay					1										1	102	156
Cloud			1				3									7	34
Coffey																178	178
Comanche																12	18
Cowley	1						1									277	332
Crawford					2							3				347	511
Decatur																20	29
Dickinson													1			99	150
Doniphan											1					101	136
Douglas	1		1		1	2			1			3		1	3	176	313
Edwards																22	47
Elk			1													39	57
Ellis							1									21	26
Ellsworth							4				1	6				40	101
Finney						1	1								1	29	71
Ford						5				1						44	94
Franklin	1					2								1		75	168
Geary			1												1	36	100
Gove															1	11	22
Graham																19	37
Grant																......	5
Gray																7	14
Greeley																......	......
Greenwood																44	73
Hamilton							1					2				2	8
Harper																37	69
Harvey					2	4						2				68	109
Haskell			1													10	15
Hodgeman							1									4	15
Jackson																49	109
Jefferson																19	19
Jewell																58	58
Johnson																143	143
Kearny												1				2	5
Kingman																23	85
Kiowa																11	19
Labette									2		1					65	126
Lane																11	15
Leavenworth																71	144
Lincoln			1		2											40	73
Linn															2	25	81
Logan																13	17
Lyon																194	213
Marion												1				37	98

TABLE No. 5—CONCLUDED.

COUNTY.	Policemen	Printers and pressmen	Real-estate agents	Seamstresses	Steam-railway employees (office)	Steam-railway employees (operating department)	Stockmen	Street-railway employees	Shoemakers	Stenographers	Stone- and marble-cutters	Servants	Tailors	Tinners	Teachers	Not specified	Totals
Marshall						1	1									90	208
McPherson																41	56
Meade																15	29
Miami												7				21	55
Mitchell												3			1	45	106
Montgomery			2											1	1	35	118
Morris						4										38	100
Morton			1				2										8
Nemaha				1								1			1	79	190
Neosho							1									53	83
Ness																15	19
Norton																80	80
Osage													1		1	53	200
Osborne						1										82	101
Ottawa																	
Pawnee																25	56
Phillips																64	120
Pottawatomie									1							34	78
Pratt																17	68
Rawlins			2				7					3			1	14	56
Reno			2									1				151	200
Republic						2										15	49
Rice															1	40	69
Riley			1	4			2					6				44	138
Rooks															1	32	74
Rush																9	75
Russell			1	3			4									10	47
Saline						1	2	1				1			1	61	178
Scott			1										1			1	7
Sedgwick		1		11		12	7		2	1		15	5		1	218	640
Seward																1	14
Shawnee																10	27
Sheridan																19	19
Sherman			2			1	2									18	40
Smith				1			1									20	66
Stafford																75	98
Stanton																	
Stevens																7	13
Sumner				8	4	5	3					6				28	119
Thomas																39	50
Trego				1									1		2	26	42
Wabaunsee													1			18	36
Wallace																7	13
Washington							1									130	147
Wichita															1	5	8
Wilson					2	2		1								25	106
Woodson					1										2	79	101
Wyandotte																36	88
CITIES:																	
Atchison		1			2	8					1	4	2		2	124	196
Coffeyville																164	164
Kansas City	1	1	4	7	5	7	6	1			4	62		2	3	42	1,123
Leavenworth		1				1		1	2		4	30				89	31[illegible]
Parsons															1	67	94
Topeka		7	3		3	12			2	1		6	2		3	249	590
Wichita																	
Totals	4	11	25	38	25	68	52	4	11	3	12	164	14	5	34	6,705	12,257

TABLE No. 6.—AGES OF THE DECEASED.

County.	Under 1 year.	Between—														Above 110 years.	Unknown ages.	Totals.
		1 and 2 years.	2 and 5 years.	5 and 10 years.	10 and 15 years.	15 and 20 years.	20 and 30 years.	30 and 40 years.	40 and 50 years.	50 and 60 years.	60 and 70 years.	70 and 80 years.	80 and 90 years.	90 and 100 years.	100 and 110 years.			
Allen	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	81	81
Anderson	2	2	5	1	13	1	3	1	2	3	8	13	....	....	....	....	....	54
Atchison	4	....	....	....	3	1	5	10	6	6	7	18	4	....	....	....	14	78
Barber	10	5	....	....	1	2	5	1	3	2	2	5	1	1	....	....	2	40
Barton	17	2	3	8	....	3	4	6	3	6	13	10	7	....	....	....	34	116
Bourbon	12	11	13	8	4	22	46	41	35	27	45	16	19	5	....	....	7	311
Brown	2	1	....	....	2	1	2	3	2	4	8	8	5	....	....	....	9	47
Butler	19	4	3	7	4	3	13	11	2	10	21	16	13	....	....	....	10	136
Chase	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Chautauqua	8	12	7	6	7	1	6	6	4	1	4	1	....	1	....	....	....	64
Cherokee	92	30	48	21	5	13	43	28	34	43	43	45	18	2	....	....	55	520
Cheyenne	4	3	1	4	....	....	8	9	....	2	7	1	1	....	....	....	....	40
Clark	3	1	2	....	....	2	....	1	....	1	5	2	....	....	....	....	....	17
Clay	17	4	3	8	3	5	10	7	10	12	18	21	21	1	....	....	16	156
Cloud	....	....	....	4	1	2	2	5	3	3	8	8	....	....	....	....	4	34
Coffey	38	6	5	2	....	5	14	10	9	12	28	18	12	2	....	....	17	178
Comanche	1	....	2	2	....	....	2	1	2	3	2	2	....	....	....	....	1	18
Cowley	45	13	10	16	12	20	48	25	14	25	49	33	13	1	....	....	8	332
Crawford	133	33	43	20	6	13	42	49	36	32	47	35	12	8	....	....	7	511
Decatur	1	2	....	1	....	1	3	5	1	2	....	3	....	....	....	....	10	29
Dickinson	19	5	5	4	9	1	7	10	9	15	22	33	9	1	....	....	1	150
Doniphan	20	3	8	2	8	3	9	4	10	9	18	22	12	1	1	....	16	186
Douglas	27	11	14	7	6	11	24	20	22	27	42	53	20	4	....	....	25	313
Edwards	....	13	....	....	5	....	11	....	....	....	....	....	....	....	....	....	18	47
Elk	6	1	2	4	1	3	3	2	....	4	4	4	5	1	....	....	17	57
Ellis	3	3	2	2	1	....	1	....	1	1	1	3	1	....	....	....	7	26
Ellsworth	6	8	4	11	9	3	12	6	5	11	5	14	2	4	....	....	1	101
Finney	12	3	2	1	1	3	12	10	6	4	5	9	1	....	....	....	2	71
Ford	9	1	3	1	3	4	15	3	9	5	13	17	7	....	....	....	4	94
Franklin	5	5	5	2	2	3	14	14	6	11	14	19	13	1	....	1	53	168
Geary	8	3	1	2	....	3	8	9	9	5	18	11	7.	2	....	....	14	100

TABLE No. 6 – CONTINUED.

COUNTY.	Under 1 year.....	BETWEEN – 1 and 2 years.....	2 and 5 years.....	5 and 10 years.....	10 and 15 years.....	15 and 20 years.....	20 and 30 years.....	30 and 40 years.....	40 and 50 years.....	50 and 60 years.....	60 and 70 years.....	70 and 80 years.....	80 and 90 years.....	90 and 100 years.....	100 and 110 years.....	Above 110 years...	Unknown ages ...	Totals ....
Gove..........	4	.....	.....	1	.....	.....	2	.....	3	.....	.....	2	.....	.....	.....	.....	10	22
Graham..........	5	2	2	1	.....	3	6	1	.....	2	3	6	2	.....	.....	.....	4	37
Grant..........	1	.....	.....	1	.....	1	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	5
Gray..........	2	.....	3	1	.....	1	1	.....	.....	2	1	1	2	.....	.....	.....	.....	14
Greeley..........	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Greenwood..........	13	2	6	2	.....	1	4	4	2	3	11	7	2	.....	.....	.....	16	73
Hamilton..........	.....	1	.....	.....	.....	.....	2	.....	.....	1	3	.....	1	.....	.....	.....	.....	8
Harper..........	10	1	.....	.....	2	3	9	8	4	3	10	10	5	.....	.....	.....	4	69
Harvey..........	10	3	4	4	5	4	15	8	6	16	17	5	5	3	.....	.....	4	109
Haskell..........	4	.....	.....	.....	.....	.....	.....	1	3	2	2	.....	.....	.....	.....	.....	3	15
Hodgeman..........	3	.....	.....	1	1	1	2	2	1	.....	2	1	1	.....	.....	.....	.....	15
Jackson..........	12	3	2	2	1	2	11	10	11	6	7	22	8	1	.....	.....	11	109
Jefferson..........	3	1	3	1	.....	1	.....	3	.....	1	2	2	1	.....	.....	.....	1	19
Jewell..........	6	7	7	6	5	2	4	3	3	2	3	2	2	.....	.....	.....	6	58
Johnson..........	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	143	143
Kearny..........	2	.....	.....	.....	.....	1	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	5
Kingman..........	7	3	2	4	6	8	9	3	7	11	7	6	.....	.....	.....	.....	12	85
Kiowa..........	3	2	2	1	.....	2	1	.....	1	3	.....	2	2	.....	.....	.....	.....	19
Labette..........	7	4	4	9	2	4	4	7	6	8	20	14	11	.....	.....	.....	26	126
Lane..........	3	3	1	.....	.....	.....	3	1	.....	.....	.....	1	.....	.....	.....	.....	3	15
Leavenworth..........	21	7	7	6	7	5	10	14	9	6	19	16	9	.....	.....	.....	8	144
Lincoln..........	36	3	.....	.....	1	.....	4	5	1	7	8	7	6	.....	.....	.....	.....	78
Linn..........	4	6	7	3	4	2	6	9	12	12	7	2	5	2	.....	.....	.....	81
Logan..........	2	1	2	.....	1	1	4	2	1	1	.....	2	.....	.....	.....	.....	.....	17
Lyon..........	19	8	7	6	4	8	15	7	12	14	40	45	13	2	.....	.....	13	213
Marion..........	13	.....	6	3	.....	2	5	3	5	9	15	14	5	.....	.....	.....	18	98
Marshall..........	28	11	8	5	5	4	16	8	17	16	23	37	21	1	.....	.....	8	208
McPherson..........	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	56	56
Meade..........	4	6	3	3	.....	.....	5	.....	1	.....	3	3	1	.....	.....	.....	.....	29
Miami..........	10	3	.....	.....	5	.....	5	.....	6	7	5	8	.....	1	.....	.....	5	55
Mitchell..........	15	5	6	2	4	1	8	2	6	12	21	12	7	1	.....	.....	4	106

Montgomery	5	3	10	9	4	11	16	9	10	9	14	10	2				6	118
Morris	17	2	2	6	3	2	4	9	12	19	7	5	9				3	100
Morton										2	1							3
Nemaha	27	10	10	7	3	6	10	12	19	19	28	18	16	5				190
Neosho	11	8	2		4	3	5	8	1	7	9	11	8				11	83
Ness	3	1		2			2	1	1	1	5	2		1				19
Norton	13		3	2	7	4	9	6	8	3	10	16	4					80
Osage	27	6	5	8	3	9	14	9	13	20	28	27	18	2			11	200
Osborne	7	2	3			2	1	2	3	3	3	7	1				67	101
Ottawa																		
Pawnee	11		1		1	4		8	2	4	9	8	2				6	56
Phillips	25	4	3	3	3	3	7	10	9	7	7	14	6				19	120
Pottawatomie	12		2	2	5	2	3	2	3	5	9	18	4				6	73
Pratt	11	3	2	2	3	9	7	6	9	5	6	1					4	68
Rawlins	11	8	3	3		1	2	3	4	7	7	2					5	56
Reno	29	1	5	2	5	5	14	11	10	19	28	20	9	1	1		40	200
Republic	2		3					3	1		20		4				16	49
Rice	8	2	3	3		4	8	6	3	2	5	15	7	2			1	69
Riley	13	12	20	5	9	14	11	24	6	8	9	4	2	1				138
Rooks	18	2	1			1	4	6	7	5	14	10	6					74
Rush	4	10	4	3	2		4	3	6	10	8	5	4				12	75
Russell	3	2	1	3	2	2	2	3	3	7	4	7	7	1				47
Saline	32	2	8	8	3	4	13	15	11	20	16	32	5	1			8	178
Scott																	7	7
Sedgwick	52	78	31	38	34	25	51	48	50	51	62	62	9	6	1		42	640
Seward	1						3	2		3	2	2	1					14
Shawnee	8	1	1	2	1	1	1	1	4	4	2	4	2					27
Sheridan	4		1		2			3	4	2	2						1	19
Sherman	7	2	2	2		2	2	6	2	3	2	1	1				8	40
Smith	3	4	3	4	4	3	3	6	8	4	5	4	2	1			12	66
Stafford	18	10	17	12	9	5	6	4	5	4	4	2	1				1	98
Stanton																		
Stevens	4					1	3		2		1		1				1	18
Sumner	24	16	10	9	4	3	4	6	9	12	13	4	3				2	119
Thomas	14	3	2		1	2	1	3		3	5	2	2				12	50
Trego	8	1	6		1		3	1		2	3	3	1	1			12	42
Wabaunsee	2		2	3	1	2	2	3	1	3	7	5	1				4	36
Wallace	2	2					3	1	1		2	2						13
Washington	21	5	6	3	5	5	6	3	15	23	20	19	14	1			1	147
Wichita			2							2	1		1				2	8
Wilson	8	4	7	3	4	4	10	8	12	13	14	10	8	1				106
Woodson	17	5	1	2		5	7	4	1	10	14	17	6	1			11	101
Wyandotte	16	1	6		6	2	9	2	7	6	12	16	3		1		1	88

TABLE No. 6—CONCLUDED.

CITIES.	Under 1 year.....	BETWEEN—													Above 110 years..	Unknown ages....	Totals............
		1 and 2 years.....	2 and 5 years.....	5 and 10 years.....	10 and 15 years.....	15 and 20 years.....	20 and 30 years.....	30 and 40 years.....	40 and 50 years.....	50 and 60 years.....	60 and 70 years.....	70 and 80 years.....	80 and 90 years.....	90 and 100 years.....	100 and 110 years.....		
Atchison..........................	29	4	6	7	5	8	19	14	19	12	83	15	12	2	......	......	11	196
Coffeyville..........................	28	2	10	10	1	13	15	13	6	14	26	10	8	......	......	......	8	164
Kansas City..........................	162	23	39	23	32	38	136	137	110	116	117	68	28	5	2	......	87	1,123
Leavenworth..........................	46	5	3	11	9	14	26	24	24	27	44	53	22	3	1	......	1	313
Parsons..........................	20	14	3	4	......	......	3	1	3	12	17	10	1	......	......	......	4	94
Topeka..........................	88	8	24	23	12	18	61	60	50	59	80	63	35	8	1	......	......	590
Wichita..........................	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Totals..........................	1,636	533	541	425	342	423	1,034	900	829	997	1,422	1,260	594	84	8	1	1,228	12,257

BULLETINS.

BULLETIN
OF THE
Kansas State Board of Health.

Published Monthly at the Office of the Secretary of the Board, Topeka, Kan.

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No. 1. JANUARY 1906. VOL. 2.

What
Kind of
Food do you eat?

Read in full the chemist's report on food analyses on other pages of this Bulletin.

The State Board of Health requires fumigation after all cases of tuberculosis and typhoid fever. Health officers, please take notice.

It is a matter of congratulation to the people of this country that such able journals as *Collier's Weekly* and the *Ladies' Home Journal* have taken up the fight against patent nostrums. The annual consumption of patent medicines, which include vast quantities of poor whisky or diluted alcohol, when expressed in dollars and cents, is something stupendous. This is not only an economic waste to the people, but is also in many and probably most instances positively harmful physically to those who consume such stuff. The fundamental principles involved in this gigantic fraud are in the main those of dishonesty and graft, and should, and no doubt do, receive the condemnation of every one who has given the matter any investigation or thought whatsoever. We take our hat off to *Collier's Weekly*. "Lay on, MacDuff!"

VITAL STATISTICS

Reported to the Kansas Board of Health for December, 1905.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Dysentery.	
	Cases.....	Deaths...	Cases.....	Deaths...	Cases...	Deaths...	Cases.....	Deaths...	Cases....	Deaths...	Cases.....	Deaths...
Allen............	0	0	11	3	4	0	1	0	0	0	0	0
*Anderson.........												
Atchison.........	0	0	0	0	0	0	0	0	5	0	1	1
Barber...........	1	1	1	1	0	0	0	0	0	0	0	0
Barton...........	0	0	0	0	6	0	0	0	4	0	0	0
Bourbon.........	0	0	1	1	5	3	1	0	0	0	0	0
Brown...........	0	0	2	0	2	1	3	0	6	0	0	0
*Butler...........												
Chase	1	0	2	1	5	1	10	0	0	0	0	0
Chautauqua....	0	0	0	0	3	0	5	2	9	0	0	0
Cherokee........	3	3	0	0	5	1	0	0	0	0	0	0
†Cheyenne												
Clark.	1	0	0	0	0	0	0	0	5	0	0	0
Clay	1	1	2	1	0	0	2	0	1	0	0	0
Cloud	0	0	0	0	0	0	2	0	3	0	0	0
Coffey...........	0	0	1	0	1	0	0	0	0	0	0	0
Comanche.......	0	0	1	0	0	0	0	0	1	0	0	0
*Cowley.												
Crawford........	1	1	0	0	10	2	0	0	1	0	0	0
Decatur.........	0	0	1	1	1	0	1	0	0	0	0	0
Dickinson.......	0	0	0	0	2	0	0	0	0	0	0	0
Doniphan........	2	2	0	0	4	1	0	0	4	0	0	0
Douglas..........	1	1	1	0	1	1	2	0	0	0	0	0
Edwards........	1	0	9	0	0	0	0	0	0	0	4	0
Elk..............	0	0	0	0	18	0	2	0	0	0	0	0
Ellis..	0	0	0	0	2	0	0	0	0	0	0	0
Ellsworth........	2	1	0	0	2	0	0	0	0	0	0	0
Finney	1	1	0	0	1	0	0	0	0	0	0	0
Ford..	0	0	0	0	0	0	0	0	0	0	0	0
*Franklin.........												
Geary	0	0	1	1	1	0	3	0	0	0	0	0
Gove	1	1	0	0	0	0	0	0	0	0	0	0
Graham	0	0	1	0	0	0	0	0	0	0	0	0
‡Grant												
Gray..............	0	0	1	0	0	0	0	0	0	0	0	0
‡Greeley...........												
Greenwood.......	0	0	0	0	1	0	2	0	0	0	0	0
Hamilton	0	0	1	0	0	0	2	0	0	0	0	0
Harper...........	1	1	1	1	1	0	0	0	0	0	0	0
Harvey...........	0	0	3	0	1	0	1	0	0	0	0	0
†Haskell												
†Hodgeman.......												
Jackson..........	0	0	0	0	3	1	3	0	1	0	0	0
Jefferson.........	0	0	0	0	2	0	3	0	0	0	0	0
Jewell..........	0	0	0	0	1	1	16	0	32	0	0	0
Johnson..........	0	0	2	0	0	0	1	0	0	0	0	0
†Kearny...........												
Kingman.........	0	0	1	0	1	0	0	0	0	0	0	0
†Kiowa............												
Labette	0	0	0	0	3	0	0	0	0	0	0	0
‡Lane												

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Dysentery.	
	Cases.....	Deaths...	Cases.....	Deaths...	Cases.....	Deaths...	Cases.....	Deaths...	Cases.....	Deaths...	Cases.....	Deaths...
Leavenworth	0	0	0	0	0	0	5	0	0	0	0	0
†Lincoln												
Linn............	0	0	0	0	0	0	0	0	1	0	0	0
†Logan...........												
Lyon	8	4	26	1	10	1	38	0	6	0	8	0
Marion...........	0	0	0	0	0	0	1	0	0	0	0	0
Marshall.........	0	0	0	0	0	0	15	0	0	0	0	0
McPherson.......	0	0	0	0	0	0	20	0	0	0	0	0
Meade..........	1	0	0	0	0	0	0	0	0	0	0	0
†Miami...........												
Mitchell..........	0	0	0	0	1	1	0	0	1	0	0	0
Montgomery	1	1	4	0	4	1	0	0	12	0	0	0
Morris...........	0	0	2	0	1	0	7	1	0	0	0	0
†Morton..........												
Nemaha	0	0	0	0	12	0	1	0	0	0	0	0
Neosho..........	4	4	1	1	14	2	2	0	0	0	0	0
†Ness.............												
Norton..........	0	0	2	2	0	0	0	0	0	0	0	0
Osage	2	0	0	0	1	0	0	0	0	0	0	0
Osborne..........	6	0	0	0	0	0	6	0	2	0	0	0
†Ottawa												
†Pawnee...........												
Phillips.........	0	0	1	0	0	0	0	0	0	0	0	0
Pottawatomie ...	0	0	1	0	1	0	8	0	0	0	0	0
Pratt............	0	0	0	0	0	0	4	0	0	0	0	0
†Rawlins..........												
Republic.........	0	0	0	0	10	0	10	0	4	0	0	0
Reno	0	0	0	0	0	0	3	0	0	0	0	0
*Rice.............												
Riley............	2	1	5	1	12	1	3	0	0	0	0	0
†Rooks...........												
Rush	0	0	0	0	6	1	0	0	1	0	0	0
†Russell...........												
Saline...........	0	0	0	0	0	0	0	0	18	0	0	0
†Scott............												
Sedgwick	3	2	0	0	8	2	2	0	12	0	0	0
†Seward												
Shawnee	0	0	1	1	22	0	3	0	3	0	0	0
†Sheridan.........												
†Sherman.........												
*Smith												
Stafford..........	3	3	1	1	0	0	0	0	0	0	0	0
‡Stanton												
†Stevens												
Sumner...........	1	1	0	0	0	0	1	1	6	0	0	0
*Thomas												
*Trego												
Wabaunsee.......	0	0	0	0	5	1	0	0	0	0	0	0
Wallace	2	0	0	0	0	0	0	0	0	0	0	0
Washington......	1	1	0	0	3	1	8	0	0	0	0	0
*Wichita												
Wilson	0	0	4	0	14	3	3	0	0	0	0	0
Woodson.........	0	0	0	0	8	3	0	0	0	0	0	0
Wyandotte.......	5	1	0	0	4	1	1	0	0	0	0	0
Cities:												
Atchison	2	2	2	1	0	0	0	0	7	0	0	0
Kansas City....	18	14	18	1	19	1	4	0	0	0	0	0
Leavenworth..	0	0	1	1	19	1	1	0	2	0	0	0
Topeka	7	7	2	2	36	6	2	0	1	0	0	0
Wichita.........	3	2	0	0	8	2	2	0	2	0	0	0
State Institutions,	20	2	0	0	0	0	0	0	0	0	0	0
Totals.....	106	58	114	22	304	40	208	4	145	0	13	1

* No report. † No contagious diseases in county. ‡ No health officer.

In addition to the diseases reported on pages 2 and 3 of this Bulletin, we have to add, for the month of December:

MEASLES.

Counties.	*Cases.*	*Deaths.*	*Counties.*	*Cases.*	*Deaths.*
Chase	2	0	Reno	3	0
Cherokee	3	2	Shawnee	1	0
Crawford	12	1	Wyandotte	1	0
Finney	1	0	Wichita city	1	0
Ford	1	0			
Lyon	1	0	Totals	27	3
Montgomery	1	0			

CHOLERA INFANTUM.

	Cases.	*Deaths.*
Clay	1	0
Coffey	3	3
Lyon	1	0
Morris	1	0
Totals	6	3

TO COUNTY AND MUNICIPAL HEALTH OFFICERS.

The State Board of Health desires to call your attention to the congressional pure food bill now before Congress, known as the "Heyburn pure-food bill," Senate bill No. 88, the provisions of which certainly receive the approval of every health officer and physician in the state.

There is a uniform movement among the various state and territorial boards of health calling the attention of county and municipal health boards to this bill, and urging that every health officer immediately write to his senator and representative in Congress urging that they support the bill, that it may be speedily enacted into law.

"The passage of strict anti-adulteration laws by a state or city necessarily involves considerable expense in the way of laboratories, etc. This law, if passed, will be a great help in that regard, because it provides that analyses shall be made in the laboratories it establishes, when asked for by the health officer of any state, as well as by the inspectors named by the bill. As sanitarians we are of course chiefly moved by the health argument, but as citizens we are always moved by the business and ethical arguments connected with this matter—arguments which are of themselves strong enough to demand the enactment of this law. Our goods are being discredited abroad, our moral sense blunted at home, by the shameless actions of a minority of our business men, who in their scramble for the temporary dollar are regardless not only of health, but also of the permanent reputation of the nation." (Maine State Board of Health.)

Please do not delay in writing your representatives in Congress at once concerning this all-important matter.

ANALYSES OF FOOD PRODUCTS.

LAWRENCE, KAN., December 30, 1905.

Dr. S. J. Crumbine, Secretary State Board of Health, Topeka:

DEAR DOCTOR—In accordance with your request, I herewith submit my report upon the adulteration of food and drugs.

In common with a number of other states, Kansas has a pure-food law on her statute-books, but there is not adequate provision for its enforcement. The last legislature, session of 1905, enacted a law (chapter 482) which made it obligatory upon the department of chemistry of the State University and of the Agricultural College to examine samples of food furnished by the secretary of the State Board of Health or by the county health officers.

The adulteration of food has been so wide-spread that the Bureau of Chemistry of the Department of Agriculture, at Washington, has, for years, been at work on methods for detecting such adulteration, and the Association of Official Agricultural Chemists (known as the A. O. A. C.) has published provisional methods for the analysis of foods. Those methods are considered official. Many states have adopted stringent laws against food adulteration and falsification, and have very much improved the quality of the food sold in those states by driving poor qualities of food out of the market. This is notably true in Massachusetts, Connecticut, Ohio, New Jersey, and New York.

It is estimated by the *American Grocer* (U. S. Dept. Agr., Div. of Chem., Bull. No. 23) that at least two per cent. of our food is adulterated, and at this low per cent. the loss to the people of this country annually would be over $90,000,000.

A. T. Wedderburn,* commenting on the common practice of adulteration, says: "The inventive genius of the American has been exerted to increase the food supply, undoubtedly a most laudable and praiseworthy undertaking; but when in so doing the manufacturer goes further, and in selling you pepper forgets to add to the words 'pure pepper' on the label the words, 'compounded with burnt meal, mustard, cayenne, buckwheat hulls, pepper dust,' etc., and also tries to obtain the price of a *pure* article, he degenerates into a common rogue." Many of the adulterations are harmless, and are used to increase bulk or weight and cheapen the article, but in so doing they rob the customer. There are, however, some adulterants that are injurious and even *poisonous*. If publicity can be given to these frauds, and if manufacturers can be required to state upon each package how much of each adulterant, preservative or coloring matter is added, we shall go far towards decreasing the sale of such foods. At any rate, the blame will rest with the consumer who is willing to buy these low-grade foods that the manufacturer may add to his gains.

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* U. S. Dept. of Agr., Div. of Chem., Bull. No. 25.

Trade-marks and labels that are used have come to be understood in the trade as signifying adulterated; thus, "strictly pure" means with a certain per cent. of adulteration, and "pure" means that still more foreign substances are present.

Some of the foods that lend themselves most readily to adulteration are: Ground spices, dairy products, baking-powders, meats (by the use of coloring matter and preservatives), coffee, chocolate, olive oil, syrup, confectionery, alcoholic liquors, vinegar, jams, jellies, canned goods, and flavoring extracts.

Several samples of food from the secretary of the State Board of Health have been received at the State University, with the request that they be examined for adulteration. Some other samples have been purchased at the request of the secretary. The result of the examination is as follows:

FLAVORING EXTRACTS.

Laboratory No. 2444. "Primrose" Flavoring Extract of Banana, Manufacturing Department of Parkhurst-Davis Mercantile Company, Topeka, Kan. Amount contained in bottle, 50 grams, or 1.8 fluid ounces. This contained 28.6 per cent. of alcohol, by weight; artificial flavoring, 16.5 per cent., by volume; coloring material, a coal-tar dye. As it is not practical to make a concentrated extract of banana, there seems to be no objections to the sale of an artificial preparation like this. It should not be labeled "Extract of Banana," however, but "Artificial Banana Flavoring." Compound ethers are very often used for making these so-called "pure-fruit flavors." The materials should be sold upon their merits and not under an assumed name, for there is usually no fruit used in their preparation.

Laboratory No. 2442. "Puritan" brand Extract of Lemon. Edward Weston Tea and Spice Company, St. Louis, Mo. The bottle contained 62.2 c.c., equal to 2.1 fluid ounces. The liquid contains 23.02 per cent. of alcohol, by weight, and no wood alcohol. It contains no oil of lemon, but is colored to imitate the oil of lemon by a coal-tar dye. This sample does not contain enough alcohol to extract any weighable amount of oil of lemon from lemon peel, although such an extract does acquire the flavor of oil of lemon.

A genuine extract of lemon, made according to the directions of the United States Pharmacopœia, would contain 5 per cent. of oil of lemon and more than 80 per cent. of alcohol. This extract, then, is not only cheapened by using less alcohol, but also by a saving of oil of lemon. The addition of a coal-tar dye would not be necessary in the genuine extract of lemon, as that has a natural yellow color. The 80 per cent. alcohol referred to is necessary to keep the oil of lemon in solution, and the chief gain to the manufacturer is in using less alcohol. An extract of the character of the sample examined is readily made by rubbing together magnesium carbonate and oil of lemon, and stirring in slowly some strong alcohol. This mixture is allowed to stand for some time and is then filtered and colored. It does have some of the lemon taste, but the amount of lemon oil present is at most only a trace. In Massachusetts, on account of the enforcement of the pure-food law during the last two or three years, this quality of extract of lemon has been almost driven from the market.

Laboratory No. 2449: "Puritan" brand Extract of Vanilla, "Strictly Pure." Edward Weston Tea and Spice Company, St. Louis, Mo. This bottle contained 74.2 grams, equal to 2.6 ounces. It contained 18.06 per cent. of alcohol, by weight, sugar, vanillin (.04 per cent.), and some artificial coloring matter, but did not contain the natural resins of the vanilla bean. The commercial extract of vanilla should be made from the dried and fermented vanilla bean. The flavor is mostly due to the presence of vanillin. The genuine vanilla extract of the United States Pharmacopœia contains nothing but sugar, water, and 50 per cent. of alcohol. The tonka bean is often the basis of cheaper extracts. It contains an active principle called coumarin, which resembles vanillin.

PRESERVED FRUITS.

Laboratory No. 2439. Blackberry Preserves, "Club House" brand. Franklin McVeagh & Co., Chicago. In this sample there was nothing found to indicate adulteration or falsification.

Laboratory No. 2440. "Silver Leaf" Tomato Catsup. Otto Kuehne & Co., Topeka, Kan. This sample contains, as a preservative, salicylic acid and either benzoic acid or sodium benzoate. It also contains an artificial coloring matter. Genuine catsup is made from fresh, ripe, boiled tomatoes, mixed with various spices, and sometimes vinegar, sugar, and red pepper. As inferior material, and even that which is fermented, is often used, it is necessary to add preservatives and coloring matter to make the stuff have a presentable appearance on the market. One author states that, out of ninety-five samples of tomato catsup examined, only fifteen were found uncolored.

Laboratory No. 2487. "May Day" Catsup. Packed by Greenwood Packing Company, Greenwood, Ind. Purchased in Lawrence. This sample contained salicylic acid and sodium benzoate, as preservatives, and some coloring matter. Upon a small label on the bottom of the bottle, and hence entirely out of sight of the customer, was the statement: "Put up in strict accordance with pure-food laws, containing fresh, ripe tomatoes, cochineal color, spices, and benzoate of soda."

Laboratory No. 2461. Strawberry, "Orchard" brand. Bliss Syrup Refining Company, Kansas City, Mo. Purchased in Lawrence, in a pint glass can; price, ten cents. The color was a brilliant red; the mass was a thick jelly, with a few small strawberries scattered through it. This material contains a red coal-tar dye to color it; some sugar, probably glucose, to sweeten it. It contains considerable starch, some of which may have been added to thicken it, and quite a quantity of sodium sulfite, as a preservative. It contains 19.9 per cent. of reducing sugar. The amount of preservative is so large that on opening the can the sharp, penetrating odor of sulfur dioxid can be readily perceived. A genuine fruit jelly should consist of nothing but the fruit and cane sugar, but food analysts state that fully ninety per cent. of the jams and jellies on the market are adulterated. For "stock" of this material frequently the refuse left from the manufacture of cider is used, and this is mixed with water and glucose and boiled down. It is then thickened by the addition of starch, or sulfuric acid may be added for the same purpose. Little attempt is made to imitate the flavor of any particular fruit, but the color and label are carefully attended to.

SYRUPS.

Laboratory No. 2435. "Absolutely Pure Canada Sap Maple Syrup." "Full measure." The National Syrup Company, St. Paul, Minn., St. Paul Syrup Refining Company, successor. This sample was contained in a rectangular tin can, the capacity of which was 57.75 cubic inches, which is equal to a quart, as stated. Upon analysis, this sample was found to be adulterated. This was shown not only by the small per cent. of ash and the high per cent. of cane sugar, but also by Hortvet's method, with lead subacetate. This ingenious guaranty is on the can: "Certificate of purity and measurement of this can of absolutely pure Canada sap maple syrup." "We guarantee this syrup to be absolutely pure and free from any impurities consisting of acids, glucose, grape or corn sugar, and is warranted full measure." This is probably true, but it is very misleading; for although the syrup does not contain any of the sugars referred to, yet it does consist practically of cane sugar, flavored to resemble genuine maple syrup, and so it is a fraud upon the consumer, who pays about as much for it as he would pay for the genuine maple syrup. The flavoring in syrups of this character is often obtained by mixing with them an extract of hickory or maple chips or bark. As a substitute for maple syrup glucose is not as satisfactory as cane sugar, and so the latter, though more expensive, is generally used.

VINEGAR.

Laboratory No. 2437. White Vinegar, label, "Vinaigre Triple Clarifie, Produit de pur Vin." J. Gessat Jeune, Bordeaux. This sample, which is ostensibly white wine vinegar, contains 4 per cent. of acetic acid, 0.29 per cent. of solids, and 0.08 per cent. of ash. Its specific gravity is 1.001. It contains a little lime, considerable salt, and a trace of sulfates. With lead acetate it gives no precipitate, and this would distinguish it from cider vinegar. The residue from 25 c.c. gives no crystalline precipitate with alcohol and ether, as would be the case with genuine wine vinegar. The term "vinegar" is a general one, and applies to a product made from cider, wine, malt or beer, spirit, glucose, molasses, or wood. Its specific gravity varies from 0.997 to 1.029, and its acidity from 3 to 10 per cent. of acetic acid. This sample had a very low specific gravity and about the average acidity of cider vinegar, namely, 4 per cent. In many states there is a fixed standard of acidity, at least for cider vinegar, and there should be for any vinegar. In the United States it is stated that the term "white wine vinegar," which this purports to be, is usually applied to distilled or spirit vinegar, and that is what this is, notwithstanding the deceptive French label. This is much cheaper than a genuine wine vinegar, and inferior in flavor. There was blown on the bottle the name of a Kentucky distilling company. This is a flagrant example of the misbranding of a food product, which is forbidden in the United States Statutes at Large, 1901–1903 (vol. 32, pt. 1, ch. 1357, p. 632).

Laboratory No. 2438. Wine Vinegar. The label was exactly like that on the No. 2437, but the vinegar was evidently colored with caramel or some similar substance. On the bottle was blown the name of a Maryland distilling company. This sample contains 5.35 per cent. of acetic acid, 0.17 per cent. of solids and 0.04 per cent. of ash. Its specific gravity is 1.007. It gives slight precipitates indicative of chlorides, sulfates, and lime. There is no precipitate to indicate that it is a cider vinegar, and no tartrate is obtained to indicate that it is a wine vinegar, as asserted on the label. This sample, then, is similar to the previous one, a spirit vinegar, colored artificially, and of greater acid strength than the other.

NITROGENOUS FOODS.

Laboratory No. 2484. Oysters purchased in Lawrence, and shipped by W. H. McGee & Co., Baltimore. This contained no borax as a preservative, and no other preservative was sought.

Laboratory No. 2488. Berwick Bay, La., oysters, purchased in Lawrence. These contained borax as a preservative. Another sample from the same locality obtained later contained borax, but in smaller quantity. Another sample of oysters from Texas contained no borax, and a sample shipped from South Norwalk, Conn., contained none.

Laboratory No. 2473. Vienna Sausage. Wolff Packing Company, Topeka, Kan. This sample was put up in the usual manner. Both the outer skin and the meat contained borax as a preservative. There was also some red coloring matter present. This very probably comes from the dye used upon the skins, although these were not tested separately.

Laboratory No. 2475. Bologna Sausage. Wolff Packing Company, Topeka. This contained borax as a preservative.

Laboratory No. 2472. Ham Sausage. Wolff Packing Company, Topeka. This contained some borax as a preservative.

Laboratory No. 2474. Lunch Ham. This contained borax as a preservative.

BAKING-POWDERS.

Various combinations of chemicals have been in use for many years for making dough light or puffing it up during the process of baking, but practically all depend upon the setting free of carbon dioxid gas (carbonic acid) in the dough. There are three or possibly four classes of baking-powders on the market. In most of them the chemicals are mixed in the proper proportion to set the gas free, and to this mixture is added from twenty to fifty per cent. of starch or flour. This is not considered an adulteration, unless the quantity of starch is too large, as it is claimed that unless something of this kind is used the chemicals will combine on standing so that the baking-powder will lose some of its strength. There are, however, a few powders in which no "filler" is used. Sodium bicarbonate, "baking soda," is used in all these baking-powders to furnish the available carbon dioxid gas, and so the powders differ only in the so-called "acid ingredients," or those substances which in the chemical action set free the gas from the baking soda. The greater the per cent. of gas set free the more efficient the powder. The classes of baking-powders are:

I.—Bicarbonate of soda and cream of tartar (acid sodium tartrate) powders. These sometimes contain a small quantity of free tartaric acid, and some brands contain a little ammonium carbonate.

II.—Bicarbonate of soda and acid calcium phosphate powders, sometimes called "phosphate" powders.

III.—Bicarbonate of soda and alum powders. Alum is a double sulfate of aluminum and potassium, or ammonium, but a simple sulfate of aluminum is often used in place of the alum. This latter salt has practically the same therapeutic properties as the alum, and whatever objections hold against the use of alum will apply to the use of aluminum sulfate; so it is simply a subterfuge to assert that alum is not used where aluminum sulfate is used. Practically the same compound remains in the bread in either case.

IV.—Bicarbonate of soda and a mixture of alum and acid calcium phosphate powders. This is a very common brand.

As mentioned above, the value of a baking-powder depends on the amount of available carbon dioxid gas that is set free in baking. This may be as large for one class of powder as another. Opinions differ in regard to the healthfulness of alum powders, but the majority of writers hold that the aluminum compound which remains in the bread after baking will probably have an injurious effect on the system if the use of alum powders is continued for some time. Most of the cheap powders on the market are alum powders, and the more expensive ones are cream of tartar or phosphate powders. Examinations were made of the following powders, purchased in the open market, with the results as given below:

Laboratory No. 2508. Price's Cream Baking Powder. "Most perfect powder made." "A pure cream of tartar baking-powder. Does not contain ammonia, lime, or alum." Price Baking Powder Company, Chicago. This is a cream of tartar baking-powder and does not contain alum. Available carbon dioxid, 11.11 per cent.

Laboratory No. 2507. Royal Baking Powder. "Absolutely pure." "This powder is composed of the following ingredients and none other: Cream of tartar, tartaric acid (the acid of grapes), bicarbonate of soda, starch." Manufactured by the Royal Baking Powder Company, of New Jersey. This is a cream of tartar baking-powder and does not contain alum or phosphates. Available carbon dioxid, 12.30 per cent.

Laboratory No. 2506. Rumford Baking Powder, Rumford Chemical Works, Providence, R. I. This is a phosphate powder and does not contain alum. Available carbon dioxid, 10.29 per cent.

Laboratory No. 2501. Shepard's "Economical" absolutely pure baking-powder, manufactured by the Shepard Baking Powder Company, St. Louis, Mo. This is an alum phosphate powder. Available carbon dioxid, 9.23 per cent.

Laboratory No. 2502. "Our Cold Water Baking Powder"; 16 ounces. Manufactured expressly for the Kansas City Wholesale Grocery Company, Kansas City, Mo. This is an alum baking-powder. Available carbon dioxid, 12.03 per cent.

Laboratory No. 2503. Kansas City Baking Powder; ten ounces for ten cents. Manufactured only by Jacques Manufacturing Company, Chicago. "Absolutely pure." This is an alum phosphate powder. Available carbon dioxid, 8.83 per cent.

Laboratory No. 2504. Calumet Baking Powder. "Not made by the trust." "Purity, strength, perfection." Calumet Baking Powder Company, Chicago. This is an alum phosphate powder. Available carbon dioxid, 12.41 per cent.

Laboratory No. 2510. Buttermilk Baking Powder. The Theo. Poehler Mercantile Company, Lawrence and Emporia, Kan. This is an alum baking-powder. Available carbon dioxid, 10.81 per cent.

Laboratory No. 2505. Purity Baking Powder. Manufactured and guaranteed by the Excelsior Manufacturing Company, Chicago. This is an alum phosphate powder. Available carbon dioxid, 6.23 per cent.

Laboratory No. 2509. Layton's Health Club; "15-ounce One-spoon Baking Powder." Layton Pure Food Company, St. Louis, Mo., and East St. Louis, Ill. This is an alum baking-powder. Available carbon dioxid, 15.29 per cent.

From the foregoing tests it is evident that there is a large amount of food on our local market that is either misbranded, adulterated, colored, and treated with preservatives, or otherwise falsified. As most of the older states have pure-food laws that are fairly well enforced, there will be an increasing tendency to force upon the Kansas market all sorts of adulterated foods that are prohibited, or are at least sold under their true names, elsewhere. The immediate remedy for this condition in this state is publicity, and later more stringent laws may be enforced.

In carrying out the above work, I wish to acknowledge the valuable assistance rendered by Dr. F. W. Bushong, Dr. R. W. Curtis, Mr. Frank Gephart, and Mr. E. T. Nelson.

Respectfully submitted. E. H. S. BAILEY,
Chemist for the State Board of Health.

On November 7, 1905, the following report was received from J. T. Willard, chemist at the Agricultural College:

We find no evidence of renovation in the Primrose butter. The analysis is as follows: Fat, 74.8; water, 18.6; salt, 4.7; casein, ash, etc., 1.9. It is free from boric acid, formaldehyde, and borax.

The sample marked "Condensed Cream," Carnation brand, gave the following results: Total solids, 27.2; fat, 8.3; ash, 1.6. Number of times condensed, 2.3. Fat in original milk, 3.7 per cent. Formaldehyde, sodium carbonate, boric acid and borax absent.

We have not been able to work on the extracts yet, but thought it best to report the progress at this time. Yours truly,
J. T. WILLARD.

By a comparison of the standards of purity as laid down by the United States Department of Agriculture, in their bulletin dated December 20, 1904, it would appear that this butter and the so-called condensed cream are deficient in butter-fat, in that the department requires 82.5 per cent. of butter-fat, as against 74.8 per cent. in the sample. The condensed cream, so-called, would appear to be nothing more than condensed milk, as comparison with the standards would seem to indicate. These standards are as follows:

Cream. Cream is that portion of milk, rich in butter-fat, which rises to the surface of the milk on standing, or is separated from it by centrifugal force, and contains not less than 18 per cent. of milk fat. Evaporated cream is cream from which a considerable portion of water has been evaporated.

Butter. Butter is the product made by gathering, in any manner, the fat of fresh or ripened milk or cream into a mass which also contains a small portion of the other milk constituents, with or without salt, and contains not less than 82.5 per cent. of butter-fat. By acts of Congress, approved August 2, 1886, and May 9, 1902, butter may also contain additional coloring matter.

SPECIAL NOTICE TO COUNTY AND MUNICIPAL BOARDS OF HEALTH.

On another page of this Bulletin you will find the law passed at the last legislature concerning adulterated or impure foods that are injurious to public health. This law provides that the State Board of Health shall publish the reports of the state chemist quarterly, sending a copy of such report to each county and municipal board of health in the state. It then becomes the duty of each county and city board of health to examine these reports and analyses contained therein, and in all cases wherein any impure or poisonous substance is found detrimental or injurious to the health of those consuming or using same as food or drink that said board of health shall publish, and cause to be made public, the name of the article or articles so found to be impure and injurious to health, and the name of the manufacturer thereof, the same to be published in the official county paper and paid for as county or other city printing. You will therefore, in compliance with this law, have an official meeting of your county or city board of health in which the results of these analyses shall be gone over carefully, in order that your board may determine what article or articles are impure or poisonous, or detrimental and injurious to those consuming or using same as food or drink.

I have requested the United States Department of Agriculture to forward you a copy of their bulletin known as "Food Definitions and Standards," which was prepared by the committee on food standards, Association of Official Agricultural Chemists, which standards have been approved by Congress; also a circular, No. 15, Bureau of Chemistry, which gives the results of the borax experiments as conducted by the chief of the division, Dr. H. W. Wiley, in which twelve healthy men were selected and were fed borax and other preservatives for six months, the results obtained and the conclusions drawn therefrom being accurately tabulated in this circular, which has received the approval of the Department of Agriculture, and which is now considered a classic in the matter of food experiments.

I have also requested that bulletin No. 69, on Foods and Food Control, be sent to you. After receiving these pamphlets and circulars, together with such standard text-books and reading as may come to your hand, you should select such article or articles in said report as you consider to be injurious to the public and cause same to be published in your official county paper. I trust this matter will receive your immediate attention and that you will give it the diligent thought and searching inquiry that it unquestionably merits.

County health officers are instructed to destroy all the wooden sputum boxes remaining in the various repositories, as many of them break during transit, which fact renders it unsafe to send them by mail. Requisitions for tin mailing tubes for transmittal of sputum will be honored upon receipt at this office.

KANSAS PURE-FOOD LAWS.

General Statutes of 1901.

SECTION 2278. Adulterating food or liquor. If any person shall fraudulently adulterate, for the purpose of sale, any substance intended for food, or any wine, spirit, malt liquor, or other liquor intended for drinking, with any substance injurious to health, he shall be punished by imprisonment in the county jail not more than one year, or by fine not exceeding three hundred dollars; and the article so adulterated shall be forfeited and destroyed.

SEC. 2323. Adulteration of food and drugs. That no person shall within this state manufacture for sale, offer for sale, or sell, any drug or article of food which is adulterated within the meaning of this act.

SEC. 2325. Adulterated. An article shall be deemed to be adulterated within the meaning of this act—First, in case of drugs, if, when sold under or by a name recognized in the United States Pharmacopœia, it differs from the standard of strength, quality or purity laid down therein; second, if, when sold under or by a name not recognized in the United States Pharmacopœia, or other standard work of *materia medica*, it differs materially from the standard of strength, quality or purity laid down in such work; third, if its strength, quality or purity falls below the professed standard under which it is sold. In the case of food: First, if any substance or substances have been mixed with it so as to lower or depreciate or injuriously affect its quality, strength, or purity; second, if any inferior or cheaper substance or substances have been substituted wholly or in part of it; third, if any valuable or necessary constituent or ingredient has been wholly or in part abstracted from it; fourth, if it is an imitation of or is sold under the name of another article; fifth, if it consists wholly or in part of a diseased, decomposed, putrid, infected, tainted, or rotten animal or vegetable substance or article, whether manufactured or not, or [in the case of milk, if it is the produce of a diseased animal; sixth, if it is colored, coated, polished or powdered, whereby damage or inferiority is concealed, or if by any means it is made to appear better or of greater value than it really is; seventh, if it contains any added substance or ingredient which is poisonous or injurious to health, or any deleterious substance not a necessary ingredient in its manufacture; provided, that the provisions of this act shall not apply to mixtures or compounds recognized as ordinary articles of food, if the same be distinctly labeled as mixtures or compounds, and are not injurious to health, and contain no ingredients not necessary to the preparation of a genuine article of such mixtures or compounds, and from which no necessary ingredient in its preparation is eliminated.

TO MAKE ANALYSIS OF FOOD PRODUCTS.

Session Laws of 1905, chapter 482.

AN ACT prescribing duties of the chemistry departments of the State University and the State Agricultural College and state, county and city boards of health.

Be it enacted by the Legislature of the State of Kansas:

SECTION 1. It shall be and is hereby made the duty of the departments of chemistry of the Kansas State University and State Agricultural College of the state of Kansas to make a thorough and complete analysis of all samples of food products and beverages manufactured or prepared for domestic use sent to said chemistry departments by the State Board of Health, or any county or city board of health of the state of Kansas, and make a report to the State Board of Health, giving a correct analysis of all such samples of food or beverage, together with the name of the article or sample analyzed and of the manufacturer thereof, when the same is known to the state chemist in charge.

SEC. 2. It shall be the duty of the State Board of Health to make a record of the reports received from the said chemistry departments of the said Kansas University and State Agricultural College, and said State Board of Health shall have compiled and printed quarterly, and a copy thereof sent to each county and city board of health within the state of Kansas. Said Board of Health shall examine said reports and analyses therein contained, and in all cases wherein any impure or poisonous substance is contained, detrimental or injurious to the health of those consuming or using the same as food or drink, said Board of Health shall publish and cause to be made public the name of the article or articles so found to be impure and injurious to health and the name of the manufacturer thereof, where the same can be ascertained, the same to be published in the official county paper, and paid for as other county or city printing.

SEC. 3. This act shall take effect and be in force from and after its publication in the official state paper.

Approved March 9, 1905.
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BULLETIN

OF THE

Kansas State Board of Health.

Published Monthly at the Office of the Secretary of the Board, Topeka, Kan.

J. B. CARVER, M. D., President, Fort Scott.
B. J. ALEXANDER, M. D, - Hiawatha.
E. P. MILLS, M. D., - - - - Olathe.
G. E. LOCKE, M. D., - - - Holton.
L. A. GOLDEN, M. D., - - - Kensington.
A. B. SCOTT, M. D., - - - - Jetmore.
J. B. CARLILE, M. D., - - - Leon.
H. M. BENTLEY, M. D., - - Sterling.
C. H. LERRIGO, M. D., - - Topeka.
C. D. WELCH, Attorney, Coffeyville.

S. J. CRUMBINE, M. D., Secretary.

F. O. MARVIN, A. M., Mem. Am. Soc. C. E.,
Sanitary Adviser and Civil Engineer, Lawrence.
E. H. S. BAILEY, Ph. D., Chemist, Lawrence.
SARA E. GREENFIELD, M. D., Bacteriologist, Topeka.
W. J. V. DEACON, Statistician, Topeka.

No. 2. FEBRUARY, 1906. VOL. 2.

Do
You prefer
Borax, sulphite soda,
Salicylic acid, or boracic acid
In your food?

What coloring, please?

Let us have faith that right makes might, and in that faith let us dare to do our duty as we understand it.—*Lincoln.*

The people of this great country are to be congratulated that at last the United States senate has passed a pure-food law, which has been before that body for the past fifteen years in one form or another. Traffickers in the health and life of the people are about to get their dues, which, by the way, are long past due.

Physicians sending specimens to the state laboratory should fill out the slips found in the mailing cases, indicating by whom specimen is sent, giving name and address; also state whether the reply is desired by mail or telegraph. The bacteriologist has been unable to report on a number of specimens received of late by reason of the fact that it was not known from whom they were received.

VITAL STATISTICS

Reported to the Kansas Board of Health for January, 1906.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Dysentery.	
	Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...
Allen	1	1	0	0	3	1	0	0	1	0	0	0
*Anderson												
Atchison	1	0	0	0	1	0	0	0	0	0	0	0
*Barber												
Barton	0	0	0	0	3	1	4	0	0	0	0	0
Bourbon	5	3	0	0	0	0	1	0	0	0	0	0
Brown	0	0	2	0	2	0	3	0	6	0	0	0
*Butler												
Chase	4	0	0	0	5	1	8	1	0	0	0	0
*Chautauqua												
Cherokee	3	3	0	0	3	2	2	0	0	0	0	0
*Cheyenne												
Clark	1	0	0	0	6	1	0	0	2	0	0	0
Clay	0	0	0	0	2	0	0	0	2	0	0	0
Cloud	0	0	0	0	0	0	2	0	2	0	0	0
Coffey	0	0	0	0	0	0	0	0	2	0	0	0
*Comanche												
Cowley	0	0	0	0	2	1	0	0	4	0	0	0
Crawford	4	4	1	1	3	0	1	0	0	0	0	0
Decatur	0	0	1	1	0	0	0	0	0	0	0	0
Dickinson	0	0	0	0	0	0	1	0	0	0	0	0
Doniphan	0	0	0	0	5	0	0	0	4	0	0	0
Douglas	2	2	1	0	0	0	0	0	0	0	0	0
Edwards	1	0	3	1	0	0	0	0	0	0	1	0
†Elk												
Ellis	0	0	0	0	3	3	0	0	0	0	0	0
*Ellsworth												
†Finney												
Ford	0	0	0	0	1	0	1	0	0	0	0	0
*Franklin												
Geary	1	1	2	0	0	0	1	0	0	0	0	0
*Gove												
†Graham												
‡Grant												
Gray	1	0	3	0	0	0	0	0	0	0	0	0
‡Greeley												
Greenwood	0	0	18	0	4	1	8	0	0	0	0	0
†Hamilton												
Harper	0	0	0	0	0	0	6	0	0	0	0	0
Harvey	1	1	1	1	0	0	6	0	1	0	0	0
*Haskell												
†Hodgeman												
Jackson	0	0	0	0	0	0	3	0	1	0	0	0
Jefferson	0	0	0	0	2	0	0	0	1	0	0	0
*Jewell												
Johnson	0	0	1	0	1	1	1	0	0	0	0	0
†Kearny												
Kingman	0	0	3	1	8	1	0	0	0	0	0	0
†Kiowa												
Labette	1	1	0	0	0	0	0	0	0	0	0	0
‡Lane												

CONTAGIOUS AND INFECTIOUS DISEASES — Concluded.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Dysentery.	
	Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...
Leavenworth	0	0	0	0	29	2	2	0	0	0	0	0
Lincoln	0	0	0	0	0	0	0	0	7	0	0	0
Linn............	0	0	0	0	0	0	0	0	1	0	0	0
*Logan...........												
Lyon	0	0	0	0	2	0	3	0	0	0	1	0
Marion..........	0	0	0	0	0	0	6	0	0	0	0	0
Marshall.........	0	0	0	0	0	0	22	0	0	0	0	0
*McPherson.......												
†Meade..........												
Miami...........	1	1	0	0	0	0	0	0	0	0	0	0
Mitchell.........	0	0	0	0	6	3	0	0	0	0	0	0
Montgomery	0	0	2	0	7	2	0	0	56	1	0	0
*Morris..........												
Morton..........	1	1	0	0	0	0	0	0	0	0	0	0
Nemaha	1	1	0	0	5	0	2	0	0	0	0	0
*Neosho..........												
†Ness............												
Norton..........	0	0	0	0	1	0	0	0	0	0	0	0
Osage	0	0	2	2	2	1	2	0	0	0	0	0
*Osborne.........												
†Ottawa												
Pawnee..........	0	0	0	0	0	0	5	1	0	0	0	0
†Phillips.........												
Pottawatomie ...	0	0	0	0	0	0	5	0	0	0	0	0
Pratt...........	4	0	0	0	0	0	2	0	0	0	0	0
*Rawlins.........												
Republic........	0	0	1	0	7	1	4	0	2	0	0	0
Reno	0	0	0	0	0	0	1	0	0	0	0	0
*Rice............												
*Riley												
*Rooks												
Rush	1	0	0	0	0	0	0	0	0	0	0	0
†Russell..........												
Saline..........	2	2	0	0	0	0	0	0	6	0	0	0
†Scott...........												
*Sedgwick												
†Seward												
Shawnee	0	0	0	0	6	0	9	1	0	0	0	0
†Sheridan........												
Sherman	0	0	1	1	0	0	0	0	0	0	0	0
*Smith												
Stafford.........	1	1	2	0	0	0	0	0	0	0	0	0
‡Stanton												
†Stevens												
Sumner..........	0	0	0	0	0	0	0	0	8	0	0	0
*Thomas												
†Trego												
Wabaunsee.......	0	0	0	0	11	1	0	0	0	0	0	0
Wallace	2	0	0	0	0	0	0	0	0	0	0	0
Washington......	0	0	0	0	0	0	9	1	0	0	0	0
Wichita	0	0	1	0	0	0	0	0	0	0	0	0
Wilson	3	0	6	1	12	0	0	0	0	0	1	0
Woodson.........	0	0	0	0	1	0	0	0	0	0	0	0
Wyandotte......	0	0	0	0	6	0	0	0	0	0	0	0
Cities:												
Atchison	1	0	7	1	0	0	1	0	12	0	0	0
Leavenworth ..	3	3	0	0	20	0	2	0	6	0	0	0
Topeka	2	2	0	0	20	2	2	1	1	0	0	0
*Wichita.........												
Kansas City....	16	9	41	5	38	5	2	0	0	0	0	0
State Institutions,	29	1	3	0	0	0	0	0	0	0	0	0
Totals.....	93	37	102	15	220	29	125	5	123	1	3	0
For January, 1905,	0	0	14	3	55	10	149	9	718	2	0	0

* No report. † No contagious diseases in county. ‡ No health officer.

In addition to the diseases reported on pages 18 and 19 of this Bulletin, we have to add, for the month of January:

MEASLES.

Counties.	*Cases.*	*Deaths.*	*Counties.*	*Cases.*	*Deaths.*
Cherokee	10	1	Sumner	1	0
Cloud	3	0	Trego	3	0
Crawford	150	4	Washington	1	1
Harvey	1	0	Wyandotte	4	0
Montgomery	1	0	Kansas City	1	0
Osage	6	0			
Pratt	6	0	Totals	187	6

CHOLERA INFANTUM.

Counties.	*Cases.*	*Deaths.*
Crawford	1	1
Kingman	1	1
Totals	2	2

THE HEALTH OFFICER'S RELATION TO THE PROFESSION.

Paper read at the second annual conference of the State Board of Health with county and municipal health officers, June 27, 1905, by Dr. J. W. GRAYBILL, county health officer of Harvey county, Newton, Kan.

One who is in a position to know is often impressed with the strained relations which sometimes exist between the medical man who has control of the health department of a county and some members of the profession. That such relations have in times past existed and do still becomes a self-evident fact to every health officer soon after he assumes the responsibility of his office.

I do not assume that I am a pessimist, neither do I care to have others present me with the appellation. But I am of the opinion that the county health officer is a much-abused piece of humanity; and that much of this can be charged to members of the medical profession cannot be denied. I am not prepared to say that this is ever done intentionally.

But how often it occurs, when we call at a residence to disinfect after a case of contagious disease, that the good housewife informs us the attending physician said "the spare bedroom need not be fumigated, as no one was in that room since Mary was sick." Or, again, when the young health officer appears at a wealthy home in the city where several inmates have been sick with smallpox, he is met with the gentle reminder that "Doctor Know-it-all [the family doctor] has seen to all that," and that his (the health officer's) services were not needed, and nothing short of the chief of police will secure his admission—all because the attending physician has not informed the family that his presence there was according to law.

Another factor, and one which is contributing much as a disturbing element, is the lack of confidence which many members of the profession place in the health officer; whether it is because of exaggerated ideas of their own abilities or lack of confidence in that of the health officer, or whether they fear it too much of a condescension on their part, and would thereby add to the popularity of this much-abused man, is a problem I am unable to solve. True it is, however, that many are the medical men who will treat cases of contagious diseases and will never mention that sooner or later the head of the health department will appear upon the scene, and that his instructions must be regarded as final. Would it not be infinitely better for all concerned if the doctor informed the family, when a diagnosis of contagious disease is made, that the health officer, acting in his official capacity, would instruct them along sanitary lines, and that his advice could be accepted as being good and sound, and that they would work in harmony to prevent a spread of the disease.

There is another point I wish to emphasize before leaving the subject of the profession, and that is in regard to the vital statistics of the counties. Down in Harvey, the county from which I hail, we have in the neighborhood of twenty-five active, up-to-date physicians; and to prove to you that I am telling the truth, and that they are all I claim for them, these same physicians, with two or three exceptions, have not had a death in their practice this year, and it does not look as though there was going to be any. Another natural sequence, in a county with such smart fellows as we are, is there would be no birth reports to send in, and it does not look as though there would be any of these very soon.

The greatest problem confronting the various state boards of health to-day is the collecting of vital statistics. Scarcely an assembly of the different state legislatures but what has endeavored to perfect some system whereby these reports could be correctly obtained. Thus far only nine states have given anything like a correct report. (Kansas is not in this list.) Why physicians, who are usually the foremost advocates of the enforcement of laws, should neglect this one that is so important to the advancement of medical science, is beyond my comprehension. It is to be hoped that some method will soon be placed on vogue that will insure prompt and proper returns of these reports.

I have endeavored in the foregoing to point out a few facts which tend to destroy the close relation which should exist between the profession and the health officer. I will also show a few weak points on the other side.

It does not require a very great stretch of the memory to recall a time when the office of the county health officer was a thing which appeared on paper rather than a reality in protecting the community from filth and ravages of contagious diseases.

The majority of you can recall times in your county when the man who presided over the health department was not capable of intelligently caring for a case of measles. I could recall many instances where the physician appointed by a lay board of county commissioners to fill this most important of all county offices was not even a graduate of any medical callege, and had not the slightest conception of hygiene or sanitary science.

I recall one instance where a neighborhood became infected with diphtheria, and half the children of the community contracted the disease; many died and the health officer never came to the infected district, and, so far as I know, never conferred with any of the stricken families or the physician having charge of these cases. The only protection that was afforded the uninfected family was fear; and were it not for the fact that an able physician had been called into the neighborhood, who made it his individual duty to assume control of the epidemic, a most deplorable condition would have soon existed.

In some counties it has been the custom to give this office to the older members of the profession, who were no longer able to meet the demands of the modern physician either from an intellectual or physical standpoint. It is argued "that there was nothing much to do but draw the salary, and most any one could do that."

Another lamentable fact is that in not a few cases political debts have been paid by this office. I could cite several cases in counties in Kansas where this has actually occurred.

Still another condition which is quite common all over the state, and one which is viewed with much disdain by the honorable members of the profession, is the littleness to which these unscrupulous doctors will stoop in cutting the salary of this office. They conclude that the commissioners, seeing an opportunity to save a few dollars for the county, will the more readily consider their applications, and it is striking how often their hypothesis proves correct. This cut-rate, department-store plan has advanced to that degree of avariciousness, in a few places at least, that the most-learned members of the profession will not consider the proposition of accepting the responsibilities of so important an office; and the consequences are that some of these positions have been filled by professional imbeciles. Very little, if any, of this state of affairs now remains. The health officer is becoming better educated; laws are being enacted at every session of the legislature to give him wider scope and more authority.

The various county health boards are getting more enlightened and choose better men for their sanitary advisers. Physicians begin to recognize the value of health officers who are adepts on hygiene and sanitation, and especially is this true in the larger cities. With this revolution that is constantly going on, it is necessary for the relations between the profession and these men, whose duty it is to see that all the laws pertaining to the public health are enforced, to become closer and more professional than in times past.

The man chosen to fill this important position should be deliberate and always exercise his best judgment. If he is called by a brother physician to confirm a diagnosis of diphtheria, and after thorough examination he believes it to be a case of tonsilitis, he should not hesitate to tell the physician and the family his honest belief, no matter how much he wishes to protect his brother practitioner; for, by this false protection, the family, the county and the state are often the losers.

In some counties it is the rule to have the health officer verify the diagnosis where the attending physition is in doubt. In such communities, the relation of the health officer to the physician is indeed an important one, and he should keep in very close touch with the best men and consult them freely. In case he himself is in doubt, he should not be slow in saying so, and insist upon having a physician who can aid in clearing up the diagnosis. If, in the course of his duties, he should find a case of contagious disease cared for by an ignorant doctor, or one who is careless and negligent, the health officer should not hesitate to advise him and call his attention to the State Board's rules, and insist on a strict adherence to same. This can be done in such a manner as to cause no embarrassment to him or ridicule from the public.

It is almost needless to say that the laws pertaining to public health and the rules of the State Board should be at every health officer's tongue's end. It frequently occurs that a member of the profession wishes to be enlightened on this subject, and it saves some embarrassment and much valuable time if the health officer can give him the desired advice without having to make a trip to his office to find out.

The most-important factor to be considered in strengthening the relation between the health officer and the profession is medical organization. Every health officer in the state of Kansas should, if he has not already done so, become a member of his county and state medical society, and take an active part in each meeting. He should make it his duty to encourage this organization whenever the opportunity presents itself. If he is called upon by his society to appear on the program, his papers and talks should be along such lines as will improve sanitary conditions, advocate a stricter adherence to the quarantine laws, and point out the importance of reporting the vital statistics.

When county organizations meet in their regular sessions, it is on common ground, and if the health officer is a member of this body, it will strengthen that relation of professional brotherhood which is so essential to a strict enforcement of the laws, rules and regulations of the State Board of Health.

I predict that the time is coming when the county medical society will present the name of the physician to be appointed as health officer to the county commissioners and will fix his salary. When this happy condition of affairs takes place, which we hope will be soon, raging epidemics of contagious diseases will be reduced to the minimum. Many lives will be saved which have heretofore been sacrificed through ignorance and neglect, and then the duties of the county health officer will be a pleasure.

BACTERIOLOGICAL NOTES

Concerning the Bacteriological Diagnosis of Diphtheria.

By Henry Albert, Director of the Iowa State Board of Health Bacteriological Laboratory, Iowa City, Iowa, January 3, 1906.

We were rather surprised a few days ago when a physician asked us if it were possible to find diphtheria or diphtheria-like bacilli in the throat of a healthy individual. We thought that the facts concerning diphtheria had been thoroughly considered by us in previous numbers of the *Bulletin*, that it would scarcely be necessary to go over them again; nevertheless these references may have been overlooked, and such may account for the number of questions that are being constantly asked concerning the bacteriological diagnosis of diphtheria. That the diphtheria bacillus is the specific causative agent of diphtheria has long been recognized as the best and most certain way of diagnosing diphtheria. Diphtheria is such a formidable disease that physicians during the past ten or fifteen years have looked upon all pseudo-membranes of the throat with the enlargement of the neighboring lymph glands as diphtheria, and very properly so, because it certainly is advisable to err on the side of safety, if err we must. There are, however, many cases of pseudo-membranous angina which are not caused by the diphtheria bacillus, and cases, too, such as Vincent's angina, which are caused by a spirillum, that are of a contagious nature. It is therefore possible to have a family in which every individual has a well-developed membrane in the throat and still not contain any diphtheria bacilli. This is possible to determine only by a bacteriological examination.

On the other hand, diphtheria sometimes produces only a mild form of inflammation, characterized by a slight redness of the throat without any formation of a membrane; and yet such cases are just as contagious as are the more severe type. Further than this, diphtheria bacilli are occasionally found in the throats of healthy individuals without producing any pathological process whatever. In the public schools of New York city they have been found in the throats of about one per cent. of all the children; in the public schools of Berlin they have been found in about four per cent. of all the children; in other places it has been found in as many as six per cent., or even more, of all individuals examined. They are more numerous in physicians and nurses than others, because of their close association with the disease. Again, there has been found in the mouths of both healthy individuals and in those with a slight inflammation, a bacillus which resembles diphtheria bacilli, and is indistinguishable from it, except by animal inoculation. It is called the pseudo-diphtheria bacillus. The method of animal inoculation is seldom resorted to in the laboratory, and whenever, therefore, pseudo-bacilli are found, it is reported that diphtheria or diphtheria-like bacilli have been found.

The only safe rule to follow in the diagnosis and regulation of quarantine is to consider and treat as diphtheria every case of inflammation of the throat in which diphtheria or diphtheria-like bacilli have been found. Although in this way there is always a slight error, amounting to from one to six per cent. of cases, it is nevertheless the best rule to follow in the interests of the public health, and it cannot be said to work any hardship, although some individuals may be so unfortunate as to have a simple pharyngitis, and still have a non-virulent diphtheria or pseudo-diphtheria bacillus. Swabbings from the normal throats are never sent to the laboratory for examination, although it is possible to find these germs in the throats of a certain percentage of individuals in a perfectly normal condition.

THE TUBERCULOSIS PROBLEM AND SOME SUGGESTIONS IN DEALING WITH IT.

Read at the School of Instruction for Health Officers and sanitary conference in Representative hall, Concord, N. H., December 15, 1904, by EDWARD O. OTIS, president of the Boston Association for the Relief and Control of Tuberculosis.

Knowledge so often brings responsibility, and now that tuberculosis is recognized as a contagious and communicable disease, the responsibility of the physician, the health officer and the layman regarding this disease becomes a definite and grave one, and ought to be strenuously fulfilled in the light of our present-day knowledge. Each of the three members of the social organism has his special, individual duty in the matter; each has his special opportunity, and all can cooperate in this conflict against tuberculosis. The physician must be the teacher, for he possesses the special knowledge and experience requisite for the intelligent leader in the struggle. The health officer must be the executive, for he possesses the power. The layman must be the common soldier and be willing to trust and follow the leaders. Hence the supreme importance of intelligent, conscientious, courageous boards of health.

The main point of attack is prevention—a statement easy to make but hard of fulfilment. To prepare for the attack the community must be enlightened as to the necessity of all this effort; that is, they must be taught the prevalence of the disease, and the great direct and indirect loss sustained by the community through its ravages; they must be made to realize that it is a terrible scourge which threatens all and so often strikes down the choicest specimens of manhood and womanhood in the very flower of their age. Moreover, they must be taught that it is a preventable, avoidable disease, like typhoid fever, for example; that it is principally conveyed by the dried sputum of one suffering from the disease; that its onset is insidious, and, therefore, they must be taught what are the easily recognizable suspicious symptoms; further, that it is principally curable or capable of arrest at its beginning.

How is this educational propaganda to be effected? By much the same means that are used in conveying any other instruction—through individual and organized effort. For instance, each town has one or more schools. Simple talks by the physician or health officer, or even by the teacher, can be given the children, with literature upon the subject. These talks can be further emphasized by the teacher. The children, in their turn, will become teachers and convey the knowledge thus acquired to those at home. Again, a public meeting can be arranged and some speaker from outside asked to present the cause, illustrating it by means of charts, diagrams, and the stereopticon. Notices of such meetings can be reported in the papers, and the press, most potent of all teachers, will thus do its share of instruction. In towns where there are factories the operatives can be assembled and told just what they can do to avoid contracting the disease or infecting others with it. Church vestries can be utilized for the same purpose, and the clergymen enlisted in the work.

All the various means used in this educational propaganda, as well as those in the relief and control of the disease, can best be coordinated in the form of tuberculosis associations, and each town and city can and ought to form such a union of workers in this case. Organized effort is always more effective, and one works or contributes with more zealousness if he feels he is a part of a united body, for thus one member inspires another. Such an association must be made popular, every one asked to join it and provided work in some way, and the fees, though small, will thus provide for the necessary expenses. Not only the subject of tuberculosis proper is to be presented and the direct means of avoiding it, but as well the indirect means, such as pure air, proper food, sufficient rest, avoidance of alcohol, and, in brief, personal, house and factory hygiene should be given a prominent place.

The family physician and the clergyman enter the homes of the people, and they can do effective individualistic work through this opportunity of frequent entrance into the homes of the people, impressing upon their clientele the supreme importance of wholesome living, fresh air, and cleanliness.

The time seems now to have fully arrived for placing tuberculosis in the list of contagious reportable diseases. By no other means can a board of health obtain knowledge of the cases of this disease in their community. Such knowledge need never be made use of in any objectionable way, but simply to remind the family of the consumptive that they may contract the disease unless proper and effective means of disposing of the sputum are employed; and furthermore, the board of health should see to it that no member of the family or any one else should occupy the room where the consumptive has lived or died until it has been thoroughly disinfected and renovated, and this, of course, implies a reliable disinfectant outfit on the part of the board of health.

In the past how often almost entire families have been swept away, one member after another, because the disease was communicated from one to another, through ignorance of the contagious nature of the sputum, the common belief being, as we all know, that the disease was inherited, "that it run in the family," and there was nothing to do but bow to the inevitable. In one of the districts of the Boston dispensary three children were successively affected with this disease and died, the oldest twenty-four, the youngest sixteen, the result, undoubtedly, of communication, through the lack of proper hygienic precautions. "Had it been possible," the physician goes on to say, "to have separated the first case from the family at the time the diagnosis was made, during the incipient stage, I believe it would have been possible to have prevented further extension of the disease."

The loss, the sorrow, the disappointed hopes and the increased pecuniary burden placed upon the community through the support of poor consumptives and those dependent upon them must be so real and vivid that it will lead to definite action and precautions. Nothing is harder than to eradicate long-cherished beliefs, and it must be by repeated and strenuous insistence upon the present well-known fact of the contagious nature of the disease that the people are to be disabused of the old belief that consumption was inherited and there was no cure for it, and, further, that fresh air was injurious to one suffering from the disease. It is quite as necessary to preach the gospel of fresh air—fresh air by night as well as by day, fresh air in the church and workshop as well as in the home, fresh air in the bedroom as well as in the sitting-room—as it is to advocate the more direct measures of prevention. Indeed, if we are ever to eliminate consumption, it must be largely through elevating the standard of wholesome living, for the tubercle bacillus dreads a normally well person who feeds his lungs on pure air and his blood with the products of wholesome food, and who is not afraid of water upon his skin.

Again, the physician must teach his people the paramount importance of an early recognition of the disease and must realize that fact himself. Loss of strength and weight, easy fatigue, dyspeptic symptoms, a little shortness of breath, a so-called cold which persists, or an occasional cough, especially in the morning, or the occurrence of a little blood in the sputum, are all suspicious signs, and if the temperature shows a regular afternoon rise, even if but a fraction of a degree, the suspicion is greatly strengthened. Any individual, when once his attention is called to these symptoms as possible ones of pulmonary tuberculosis, will be eager to consult his physician when he observes some or all of them in himself.

The avoidance of promiscuous spitting must be insisted upon in the most strenuous manner, both by word of mouth and printed placard. Selfishly, every one has a personal interest in this matter. If one's spitting neighbor has no realization of the danger he may be exposing others to, or no sense of obligation to his fellow workmen or companions, self-protection must compel him to deposit his sputum in a safe place, or expel him from the workshop or from his association with others.

The unsanitary condition of workshops and factories, lack of sunshine and proper ventilation, the presence of one or more walking consumptives spitting upon the floor or in a dry cuspidor, which is not cleaned every day, or upon the handkerchief, and allowed to dry, create quite ideal conditions for the spread of this slow, insidious disease. Undoubtedly, walking consumptives in shops and factories, who are careless in the disposal of their sputum, are causes of a large amount of tuberculosis. Take an example. A young girl, nineteen years old, was found by a district physician sick in bed, suffering from consumption in the most-advanced form, who, as long as she was able, was employed in a candy factory. The factory employs a large number of young Italian girls, and this is not the first instance of consumption among them, while tuberculosis in other forms has also been observed.

Factory inspection at stated periods—inspection not only of the buildings but the occupants—antispitting placards, talks to the operatives upon the subjects, are means to obviate this dangerous condition of things. Many cities now have school inspection. Could not this be done, at least occasionally, in the country schools?

Why should tuberculosis be as prevalent as it is in country communities in this latitude? Bad air and lack of ventilation in the country houses is the chief contributing cause, I believe, and only second in importance are the ignorance of proper food constituents and poor cooking. Because the air of a room is cold is no proof that it is pure. What is viler than many a "spare chamber" or parlor in a country house, never heated in the winter, and never ventilated either in summer or winter, unless, it may be, the sitting-room with a tight coal stove and double windows!

Now, I do not mean to say that bad air, or anything else but the tubercle bacillus, will cause pulmonary tuberculosis; but I do assert that there is no more potent promoter of the favorable soil for the germination of this organism than the unventilated rooms in the country homes, and, next, poor and badly cooked food. A constant and continuous diet of well-cooked oatmeal, for example, and plenty of milk, although it might, in time, become monotonous, would be far more wholesome, I believe, than many of the menus of country homes. Not only nutritious food but in sufficient abundance, is necessary during the cold months in this latitude.

Do all we can in these various ways to prevent the disease, it will still prevail amongst us for many years to come, for old habits and ingrained ideas are hard to change. What, then, shall we do with the consumptive? First, render him innocuous to those about him; second, we must give him the best treatment for the arrest of this disease. The first condition is answered in a word—the proper disposal of the sputum. A spit-cup at home, where the sputum is always kept moist, and frequently boiled or destroyed; separate eating utensils; a handkerchief or cloth held before the mouth when coughing; washing out the mouth and nose frequently; a separate bedroom, with no carpet or upholstery, and which is exposed to sunlight and constantly ventilated; abroad, a pocket spit-cup, a paper bag, or Japanese napkins. Where there is no dried sputum there can be no danger of infection.

Most cases of consumption must be treated as best they can at home. The present experience of all civilized countries, however, is overwhelmingly in favor of sanatoria as the best, quickest, most successful and most economical method of treatment. Germany is not a rich country and is very practical and conservative. She has made clear her conviction, however, that the cheapest and most successful method of dealing with tuberculosis is through the sanatorium, in that she has erected ninety or more such institutions for the poor working people with accommodations for many thousands of consumptives. More than a dozen like institutions have been already established in little Switzerland, and so have a majority of the civilized countries of the world had the courage of their convictions and built such institutions.

It is needless to say that the sanatorium treatment is thoroughly established on the firm basis of experience and results. It is always easier to do a thing when those around us are doing the same thing and for the same purpose, and when all is guided and inspired by one mind. Furthermore, when the same general plan of treatment exists for all, it can be more perfectly and effectively fulfilled for a number than for a single person. Hence, the theoretical superiority of the sanatorium treatment, which has been proved by results to be actual.

At the home of the consumptive, however, the sanatorium idea can be at least partially carried out. First, provide against communication of the disease to other members of the family, as above indicated Second, provide fresh air continuously for the patient—a piazza, a lean-to, a simple shed in the yard open to the south, for occupancy by day, and a large-sized room for sleeping by night, with the windows always open except when undressing and dressing. At first such an abundance of fresh air seems to the patient quite overwhelming, but experience has proven that he soon becomes accustomed to it. Third, we must see that food, abundant and well prepared, is provided for the patient, and that he eats not only to maintain his weight but to increase it; for a consumptive is generally under weight. The house or tenement occupied by the consumptive may be small and the conditions unfavorable, but ingenuity on the part of the physician, with the cooperation of the patient and his friends, will produce some quite wonderful inventions for facilitating the fresh-air cure. The other details of the treatment—rest, bathing, exercise, mental diversion, what to do and what to avoid—will all be carefully arranged for by the careful physician, and I will not consider them on this occasion. One thing, however, in this connection I desire to strongly emphasize, and that is, that drugs (medicines) have very little to do in the treatment of tuberculosis. There is no specific or cure for the disease in any drug or combination of drugs. Probably they do more harm than good by impairing the digestion. Remedies galore, patented and unpatented, are advertised as cures, but most of them are devised to fill the pocketbook of the promoter and deplete that of the poor sufferer. The few drugs that are used in treating the disease are those used temporarily for special symptoms, such as something to allay the night sweating, for instance, or to relieve a constant, irritating cough.

It is marvelous how often the consumptive responds to the fresh-air-and-food treatment, if we can catch the disease in its incipiency, before large portions of the lungs have become diseased; and so I insist again upon the supreme importance of an early diagnosis and prompt treatment.

In France the large mortality of 150,000 deaths from tuberculosis a year is mainly attributed to two causes: unhealthy dwellings and alcohol. The latter cause, alcohol, exists everywhere, and in our fight against tuberculosis we must join the forces arrayed against intemperance in the use of alcohol. When one is well fed and well aired, so to speak, he does not need or feel the need of alcoholic stimulants. Therefore, preach good food and fresh air as the most powerful influences against strong drink.

The most valuable asset of any community or nation is healthy, strong inhabitants, and these are obtained by protection from pernicious influences and proper culture. Good fruit is produced by the protection of the plant from injurious influences—weeds, insects and the like—and by affording a soil favorable for the normal development of that particular plant. So with the human being: protect him from the various debilitating influences and specific infections, and afford him favorable conditions for healthy, normal growth, and the result will be a healthy, normal man, even if he may have had an indifferent inheritance.

With tuberculosis we must continually insist upon the danger of tuberculosis sputum, and hence the positive danger, always present, of promiscuous spitting; and secondly, insist upon the importance of wholesome living—fresh air, good food, rest, cleanliness. We shall never stamp out consumption by directing our efforts solely against the source of infection. We must also labor to promote conditions of wholesome living. Teach the people the elements of personal and house hygiene; teach them what is, and how to obtain, this wholesome living. On these two lines of effort must we depend in our efforts to stamp out the disease.

The Santa Fe Railway Company has generously tendered the National Fraternal Sanitarium Association, recently organized in Chicago, its property at Las Vegas, N. M., consisting of valuable buildings and nearly 1000 acres of land, worth, approximately, $1,000,000, free of cost, on condition that this association will accept it and use it for those of its membership who are victims of the "great white plague"—consumption. The association has practically accepted this offer. The officers and directors of the association represent over 100 different beneficiary associations, with an aggregate membership of over 4,000,000 members. It is the purpose of the association to establish a tent colony in connection with their hospital or sanitarium buildings. What a magnificent opportunity to bring hope and joy and prolonged life to a most unfortunate and heretofore hopelessly doomed as well as large class of our citizens.—*Iowa Bulletin.*

BULLETIN
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No. 3. MARCH, 1906. VOL. 2.

ANALYSIS OF FOOD PRODUCTS.
No. II.

LAWRENCE, KAN., March 18, 1906.

Dr. S. J. Crumbine, Secretary State Board of Health, Topeka:

DEAR DOCTOR—I herewith present a report on the recent work done in the analysis of foods.

BAKING-POWDERS.

The analysis of baking-powders has been continued and the results on twenty-one more samples are here presented. It is but fair to state that the amount of available carbon dioxid obtained from a powder may depend not only on the quality of the constituents, the skill with which they are mixed, and their correct proportion, but also largely upon the *age* of the powder. The bicarbonate of soda and the acid potassium tartrate, in the cream of tartar powders, or the bicarbonate of soda and the sodium or ammonium sulfate, or the alum, in the so-called alum powder, will gradually combine, especially if they are not absolutely dry, as long as powder is kept in stock, and so the strength of the powder will be diminished. The powders examined were purchased in the open market, and there was no means of telling how long they had been put up, except by the appearance of the package. This has been noted as far as possible. The manufacturer should be required to put upon each package the date when the powder was mixed.

As stated in a former report, opinions differ as to the healthfulness of alum baking-powders. One of the most recent writers, A. E. Leach, analyst of the Massachusetts State Board of Health, says:

> "No substance that comes within the domain of food inspection is the subject of so much controversy as baking-powder. Unless a specific law forbids the use of a particular ingredient or class of ingredients, or in some manner regulates the labeling of the package, no baking-powder of any kind can be considered adulterated under the general food law, unless it can be proved injurious to health, or unless it contains inert and useless mineral matter. As a matter of fact, the residue left in the bread by all classes of baking-powder consists of one or more drugs recognized in the pharmacopœia, all of which, *in large quantity*, exercise well-marked toxic effect on the human system. Artificial-digestion experiments and physiological tests on the lower animals using excessive doses of any of the above drugs do not show the effect of the every-day use of baking-powder in bread on the human system, and only a systematic examination of the effect of such use on large numbers of people can prove conclusively whether or not any one class of baking-powder is harmful, and, hence, whether or not it should be classed as adulterated."

In your March report as secretary of the State Board of Health to county and municipul health officers, you state:

> "As the controversy concerning whether or not phosphates or alum phosphate baking-powders are injurious to those using foodstuffs prepared with such powders has not yet been fully determined, and, as the Department of Agriculture has thus far given no expression of opinion on this subject, it is suggested that county and city boards of health suspend judgment on these powders for the time being, and until further data can be had for arriving at a final conclusion as to whether or not alum powders would come under the purport of the law as such foods to be published in the official county paper as being injurious to the public health. The Board is engaged in a painstaking investigation of this subject, and, when a conclusion based on experimental evidence has been arrived at, such knowledge will be published in the monthly bulletin."

The following analyses are submitted:

Laboratory No. 2529. "Pickwick" Baking Powder. Kansas City Grocery Company, Kansas City, Mo. Sample appeared new. This is an alum phosphate baking-powder. Available carbon dioxid, 8 per cent.

Laboratory No. 2530. "Victorex" Baking Powder. "Ten ounces for ten cents." Manufacturing department of Parkhurst-Davis Mercantile Company, Topeka, Kan. "Absolutely pure." Sample had evidently been in stock some time. An alum phosphate powder. Available carbon dioxid, 3.39 per cent.

Laboratory No. 2531. "Jack Frost" Baking Powder. Bain & Chapman Manufacturing Company, St. Louis, Mo. Sample somewhat old. This is an alum phosphate powder. Available carbon dioxid, 5.30 per cent.

Laboratory No. 2534. "Ideal" Baking Powder. Manufactured by Sherman, Putnam & Co., Chicago. "Phosphate of calcium, anhydrous basic sulfate of alumina, cream of tartar, and egg albumen." Sample not new. Contained no tartrates. An alum phosphate powder. Available carbon dioxid, 8.69 per cent.

Laboratory No. 2535. "Hygienic Pet" Baking Powder. The Hygienic Manufacturing Company, Chicago, Topeka, etc. Sample fairly new. An alum baking-powder. Available carbon dioxid, 8.62 per cent.

Laboratory No. 2536. Taylor's Best Baking Powder. "Thistle" brand. Put up expressly for F. E. Taylor, Lawrence, Kan. Appeared like a fairly old sample. This is an alum baking-powder. Materials badly compounded. Available carbon dioxid, 5.23 per cent.

Laboratory No. 2537. "Bon Bon" Baking Powder. T. C. Grant Chemical Company, East St. Louis, Ill. Appeared like new sample. This is an alum baking-powder. Available carbon dioxid, 6.97 per cent.

Laboratory No. 2547. "Grape Crystal" Baking Powder. One pound. Manufactured by Schoendorfer & Eckerhard, Cleveland, Ohio. An old sample. This is an alum phosphate baking-powder. Available carbon dioxid, 5.53 per cent.

Laboratory No. 2548. Cunningham & McCracken Company's Special, Chicago. Sample quite old. This is an alum phosphate powder. Available carbon dioxid, 2.21 per cent.

Laboratory No. 2549. "Pure Food" Baking Powder. The Pure Food Company, St. Louis, Mo. Old sample. This is an alum phosphate baking-powder. Available carbon dioxid, 1.41 per cent.

Laboratory No. 2550. Gavitt's Baking Powder. "40 cents a pound." Manufactured by W. W. Gavitt Chemical Company, Topeka, Kan. Appeared like a new sample. This is a phosphate powder. Available carbon dioxid, 7.13 per cent.

Laboratory No. 2551. "Monogram" Baking Powder. Manufactured by Wm. Schotten Company, St. Louis, Mo. Sample somewhat old. An alum phosphate powder. Available carbon dioxid, 4.05 per cent.

Laboratory No. 2552. Schilling's Best Baking Powder. A. Schilling & Co., San Francisco, Cal. Claimed to be made only from cream of tartar and bicarbonate of soda, without starch or other filler. Sample looked fairly new, but from analysis it is evident that chemical action has taken place. This is a cream of tartar baking-powder without a filler. Available carbon dioxid, 3.92 per cent.

Laboratory No. 2553. "Richelieu" Baking Powder. Sprague, Weaver & Co., Chicago. Claims to be a compound of cream of tartar, tartaric acid, bicarbonate of soda, and corn-starch. Sample appeared new. This is a cream of tartar baking-powder. Available carbon dioxid, 9.81 per cent.

Laboratory No. 2578. "Magic" Baking Powder. St. Joseph Baking Powder Company, St. Joseph, Mo. Old sample. This is an alum phosphate powder. Available carbon dioxid, 4.85 per cent.

Laboratory No. 2579. Gilliland's "Simon Pure" Baking Powder. Gilliland's Baking Powder Company, Cameron, Mo. Sample rather old. This is a cream of tartar baking-powder. Available carbon dioxid, 6.68 per cent.

Laboratory No. 2580. "Manhattan" Baking Powder. C. A. Murdock Manufacturing Company, Kansas City, Mo. Fresh sample. This is an alum baking-powder. Available carbon dioxid, 11.09 per cent.

Laboratory No. 2581. Lee Baking Powder. H. D. Lee Mercantile Company, Salina, Kan. An old sample. This is an alum phosphate powder. Available carbon dioxid, 4.04 per cent.

Laboratory No. 2617. Grand Union Tea Company's Baking Powder. New York. Fresh sample. This is an alum phosphate powder. Available carbon dioxid, 11.74 per cent.

Laboratory No. 2619. "Monarch Pure Cream Tartar" Baking Powder. Reid, Murdock & Co., Chicago. This is a fresh sample. Cream of tartar powder. Available carbon dioxid, 12.12 per cent.

Laboratory No. 2620. "Golden Seal" Baking Powder, Urbana Baking Powder Company, Urbana, Ohio. An old sample. This is an alum baking-powder. Available carbon dioxid, 2.90 per cent.

SUMMARY.

Of the thirty-one samples of baking-powder now examined, six are cream of tartar powders, two are phosphate powders, fifteen are alum phosphate, and eight are alum powders. The amount of available carbon dioxid varied from 1.41 per cent to 15.29 per cent.

MISLEADING STATEMENTS OF BAKING-POWDER MANUFACTURERS.

For advertising purposes, the manufacturers of baking-powders do not hesitate to make statements which are decidedly misleading.

It is stated in reference to an alum powder that it is made under the personal supervision of the analytical chemist of the pure food board of New York and "is absolutely free from ammonia, lime, alum, terra alba, or other injurious ingredients." It is probably technically true that the powder does not contain the exact substance that the chemist calls *alum*, but it contains some compound of aluminium that is practically the same.

Again, when the statement is made in regard to an alum phosphate powder that "the food prepared from it is free from Rochelle salts, alum, or ammonia," this is chemically true, as after the water is added to a powder a change always takes place, so that there remains in the food a compound of aluminium, but, not strictly speaking, alum, even if that exact chemical was originally used. The manufacturers claim that the materials are so carefully combined that no alum is left in the food, and that would be the case with every powder which is made under the direction of a competent chemist.

Statements similar to the following are not uncommon: "This baking-powder contains alum—not the alum sold in the drug-store, but a wholesome and healthful article, especially prepared with the greatest care, which, in the process of baking, is completely changed so as to leave in the food no substance injurious to health."

The United States Department of Agriculture, in its report on baking-powder made some years ago, makes the following suggestions:

> "The best plan for the regulation by law of the sale of baking-powders, in the present condition of our knowledge of their effect upon the system, would seem to be to require the manufacturer to use a label giving approximately the composition or analysis of the powder sold. This is recommended by Professor Cornwall, and it appears to offer the best solution of the whole problem. The testimony that has been adduced is hardly sufficient to justify the prohibition of the sale of the cheaper kinds of powders as being injurious to health, but if they are required to be sold with a label giving their true composition it would soon lead to investigations

upon this point. This is in harmony also with the modern ideas in regard to legal regulation of the sale of foodstuffs, the tendency nowadays being to allow the sale of cheap substitutes for any article of food so long as they are not actually injurious to health, but to make all possible provision to insure that the purchaser should know exactly what he is getting, and that the substitute shall not be palmed off on him as the genuine article. In the case of baking-powders, it is manifestly unjust to the public to allow the sale of a first-class tartrate powder and an alum powder as the same article, and it is equally unjust to the manufacturer of the higher-priced article. The nature of the substance is such that the purchaser has no way of ascertaining by any simple or easy means the character of the article he buys, to say nothing of its relative quality. Such a regulation should meet the approbation of all concerned in the manufacture of baking-powders. The manufacturers of high-grade powders, such as tartrate or phosphate powders, would certainly not object to it, and it would ultimately be to the advantage also to the cheaper sorts, such as the alum powders, provided they could succeed in proving that such powders produced little or no injury to the health of the consumer.

"The housewife surely deserves protection against swindling as much as the farmer [for whom the state will make analyses of fertilizers], and she has no better means of ascertaining the strength and quality of baking-powder she buys than the farmer has for learning the strength of his fertilizer. The verity and accuracy of the analysis stated on the label should be insured, as in the case of the fertilizer, by its being performed by sworn analysts. If such a regulation were enforced, people would soon inform themselves of the respective merits of different varieties, and the further requirements of a certain standard of strength, as suggested by Professor Cornwall, would probably be unnecessary, as they would learn to interpret the analysis, and a powder made up of fifty per cent. of starch, for instance, would have to be sold cheaper than one made with ten per cent., or not sold at all."

MILK.

Laboratory No. 2582. A sample of milk was received from Coffeyville, with the statement that it seemed to produce bad effects. As the milk was sour, it was only examined for preservatives, as follows: Formaldehyde, sulfites, borax, and sodium carbonate. None of these were found.

Laboratory No. 2583. Sample of milk from Coffeyville, said to be nearly fresh. This was sour when it reached the laboratory. It was tested as the previous sample, but no preservatives were found.

Six samples of milk bought of Lawrence milkmen by the city sanitary officer. The results of the analyses were as follows:

Laboratory No. 2600. Kegie's milk contained: Butter-fat, 3 per cent.; total solids, 11.50 per cent.

Laboratory No. 2601. Parrish's milk contained: Butter-fat, 4.4 per cent.; total solids, 13.57 per cent.

Laboratory No. 2602. Chamney's milk contained: Butter-fat, 3.8 per cent.; total solids, 12.83 per cent.

Laboratory No. 2603. Fritzell's milk contained: Butter-fat, 4.2 per cent.; total solids, 13.05 per cent.

Laboratory No. 2604. C. E. Brown's milk contained: Butter-fat, 4.1 per cent.; total solids, 13.77 per cent.

Laboratory No. 2605. H. H. Brown's milk contained: Butter-fat, 4.2 per cent.; total solids, 14.26 per cent.

No preservatives were found in any of the samples.

The ordinance of the city of Lawrence requires that all milk shall contain as much as 3 per cent. of butter-fat and 12 per cent. of total solids. It will be noticed that all the samples examined except No. 2600 came up to the standard. The United States official standard requires the same amount of total solids, but 3.25 per cent. of butter-fat.

SYRUPS.

Laboratory No. 2436. "Old Home" Sorghum. Packed expressly for the Ridenour-Baker Grocery Company, Kansas City. The analysis indicates that this is an artificial syrup, made up of glucose and other ingredients.

Laboratory No. 2467. Sorghum purchased through the Poehler Mercantile Company, Lawrence, in bulk. The analysis indicates that this is a genuine sorghum syrup.

SAUERKRAUT.

Laboratory No. 2577. This sample was purchased in Topeka, and is manufactured by Heinz, Pittsburg, Pa. It did not contain bleaching or preservative substances.

SAUSAGE.

Laboratory No. 2546. The sample was purchased in Topeka and was from the Clearfield Farm, of Phil. N. Hicks, Glenloch, Kan. It was examined for preservatives and sulfites, but none were detected.

LIQUOZONE.

Laboratory No. 2295. A bottle of liquozone was delivered at the laboratory for examination at the request of the Douglas County Medical Society. Upon examination, it was found to consist essentially of a dilute solution of sulfur dioxid, and contained 0.23 per cent. of this substance. This is the suffocating gas produced by the burning of sulfur. Some of the sulfur dioxid had oxidized, so that the solution also contained sulfuric acid (oil of vitriol) to the amount of 0.76 per cent. On evaporation a strong sample of sulfuric acid was obtained. The liquozone contains a small amount of organic matter, and when evaporated to dryness and ignited leaves about as much residue as a corresponding quantity of lake- or river-water.

Collier's Weekly arranged for a series of guinea-pig tests, at which representatives of the Liquozone Company were present, to determine whether or not their claim that liquozone was an internal germicide was founded on fact. Results of these experiments are quoted as printed in *Collier's Weekly*, November 18, 1905:

"LEDERLE LABORATORIES.
SANITARY, CHEMICAL AND BACTERIOLOGICAL INVESTIGATIONS.
518 FIFTH AVENUE, NEW YORK CITY.
OCTOBER 21, 1905.

"*Anthrax Test.* Twenty-four guinea-pigs were inoculated with anthrax bacilli, under the same conditions, the same amount being given to each. The representative of the liquozone people selected the twelve pigs for treatment. These animals were given liquozone in 5 c.c. doses for three hours. In twenty-four hours all pigs were dead — the treated and the untreated ones.

"*Second Anthrax Test.* Eight guinea-pigs were inoculated under the same conditions with a culture of anthrax sent by the liquozone people. Four of these animals were treated for three hours with liquozone, as in the last experiment. These died also in from thirty-six to forty-eight hours, as did the remaining four.

"*Diphtheria Test.* Six guinea-pigs were inoculated with diphtheria bacilli and treated with liquozone. They all died in from forty-eight to seventy-two hours. Two out of three controls (*i. e.*, untreated guinea-pigs) remained alive after receiving the same amount of culture.

"*Tuberculosis Test.* Eight guinea-pigs were inoculated with tubercle bacilli. Four animals were treated for eight hours with 5 c.c. of a 20-per-cent. solution of liquozone. Four received no liquozone. At the end of twenty-four days all the animals were killed. Fairly developed tuberculosis was present in all.

"To summarize, we would say that the liquozone had absolutely no curative effect, but did, when given in pure form, lower the resistance of the animals, so that they died a little earlier than those not treated.

LEDERLE LABORATORIES.
By ERNST J. LEDERLE."

"Doctor Gradwohl, representing the Liquozone Company, stated that he was satisfied of the fairness of the tests. He further declared that in his opinion the tests had proved satisfactorily the total ineffectiveness of liquozone as an internal germicide.

"But these experiments show more than that. They show that, in so far as liquozone has any effect, it tends to lower the resistance of the body to an invading disease. That is, in the very germ diseases for which it is advocated, liquozone may decrease the chances of the patient's recovery with every dose that is swallowed, but certainly would not increase them."

POISONED FOOD.

On Friday, March 2, a large number of persons who attended a sale at a farm near Marysville, and who ate of the lunch there served, were the victims of poisoning. Dr. W. R. Breeding, the county health officer, who treated many of the cases, described the symptoms thus:

"In some, the first symptoms came on within one and a half hours after eating of the materials; and at first only a nausea, followed in a short time with severe vomiting, this being followed in a short time with purging. Others took sick with sudden vomiting and purging at the same time, and, in fact, without apparent warning. The symptoms appeared in from one to five hours after taking lunch. Most of the cases were ailing, with uneasiness of the stomach and heaviness through the bowels and no appetite, for several days after the attack."

In regard to the meat used, an eight-months-old calf was killed on Monday. The meat was allowed to stand till Wednesday, when it was cooked, and seasoned with salt, and, before it was quite cool was packed in an earthen jar. The liquor in which the meat was cooked was set aside until Friday, when it was warmed and poured over the meat. This meat was used in the preparation of sandwiches, which were served with sausage (wienerwurst), ginger cake, and coffee.

A small sample of each of the foods was received several days after the affair and as complete an analysis as was possible under the circumstances was made, without finding anything that would account for this wholesale poisoning. As the symptoms might have been produced by a metallic poison like arsenic, copper, or zinc, those substances were especially sought, but were not found. The sausage, which was made by Morris & Co., at St. Joseph, Mo., contained borax as a preservative, and was colored with coal-tar dye. These substances would not have produced the symptoms observed.

From a consideration of the symptoms and the circumstances surrounding the poisoning, it seems quite probable that this was a case of what has been called "ptomain poisoning," or poisoning from animal food. A large number of cases of this kind have been studied within the past fifty years, including poisoning by milk, cheese, fish, veal, and other meats, mussels, and sausage. The symptoms vary exceedingly, but are frequently like those described in this case. The tests are largely bacteriological and require considerable time. Tests of this meat and sausage will be made in the biological department of the University and if any valuable results are obtained they will be reported later.

Yours truly, E. H. S. Bailey,
Chemist, State Board of Health.

VITAL STATISTICS

Reported to the Kansas Board of Health for February, 1906.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.	
	Cases.....	Deaths...	Cases.....	Deaths...	Cases.....	Deaths...	Cases.....	Deaths...	Cases.....	Deaths...	Cases.....	Deaths...
Allen	2	2	0	0	5	2	1	0	6	0	0	0
Anderson	0	0	0	0	1	1	1	0	0	0	0	0
*Atchison												
Barber	1	0	0	0	0	0	0	0	3	0	0	0
†Barton												
Bourbon	3	1	0	0	0	0	0	0	1	0	0	0
Brown	0	0	1	1	0	0	0	0	28	0	1	0
Butler	1	0	1	0	2	0	0	0	9	0	0	0
Chase	1	1	0	0	0	0	0	0	0	0	0	0
Chautauqua	0	0	0	0	12	1	3	1	18	0	0	0
Cherokee	3	3	0	0	5	4	1	0	0	0	1	0
*Cheyenne												
Clark	1	0	0	0	0	0	0	0	2	0	0	0
Clay	0	0	0	0	0	0	3	0	0	0	0	0
Cloud	0	0	0	0	0	0	0	0	1	0	2	0
Coffey	2	3	1	1	0	0	0	0	1	0	0	0
*Comanche												
Cowley	2	2	0	0	2	0	0	0	4	0	0	0
Crawford	10	5	1	0	6	1	2	0	2	0	50	1
†Decatur												
*Dickinson												
Doniphan	0	0	0	0	0	0	1	0	0	0	0	0
Douglas	1	1	0	0	2	1	1	0	0	0	0	0
Edwards	3	0	5	0	0	0	0	0	0	0	0	0
Elk	0	0	0	0	0	0	4	0	0	0	0	0
†Ellis												
Ellsworth	0	0	0	0	1	0	0	0	0	0	0	0
Finney	1	1	0	0	0	0	0	0	0	0	0	0
Ford	1	1	0	0	0	0	1	0	0	0	0	0
Franklin	0	0	3	0	1	0	2	0	0	0	0	0
Geary	2	2	0	0	7	0	0	0	3	0	0	0
Gove	0	0	0	0	0	0	9	0	0	0	0	0
†Graham												
‡Grant												
Gray	1	1	0	0	0	0	0	0	0	0	0	0
‡Greeley												
Greenwood	0	0	0	0	1	0	2	0	0	0	1	0
†Hamilton												
Harper	0	0	0	0	0	0	2	0	0	0	0	0
Harvey	0	0	1	1	3	1	10	0	3	0	0	0
†Haskell												
†Hodgeman												
Jackson	0	0	0	0	0	0	10	0	0	0	0	0
Jefferson	0	0	0	0	4	0	0	0	0	0	0	0
*Jewell												
*Johnson												
†Kearny												
Kingman	0	0	0	0	6	1	0	0	0	0	0	0
†Kiowa												
Labette	0	0	0	0	2	0	2	0	0	0	4	0
‡Lane												

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.	
	Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...
Leavenworth	0	0	0	0	2	0	2	0	0	0	0	0
†Lincoln												
Linn..	1	1	0	0	1	1	0	0	0	0	0	0
†Logan............												
Lyon	0	0	0	0	0	0	2	0	0	0	0	0
†Marion.												
Marshall.........	1	1	0	0	0	0	19	0	0	0	0	0
McPherson.......	2	2	0	0	0	0	10	0	0	0	0	0
Meade...........	1	1	0	0	0	0	0	0	0	0	0	0
†Miami..												
Mitchell..........	0	0	0	0	1	0	0	0	3	0	4	0
Montgomery	0	0	0	0	4	0	2	0	0	0	0	0
*Morris...........												
†Morton..........												
Nemaha	0	0	0	0	0	0	8	0	0	0	0	0
Neosho..........	0	0	0	0	0	0	8	2	0	0	60	2
*Ness												
Norton...........	0	0	3	0	0	0	0	0	0	0	0	0
Osage	0	0	0	0	2	0	0	0	0	0	0	0
Osborne	5	0	0	0	4	0	0	0	0	0	0	0
Ottawa	0	0	1	0	0	0	1	0	0	0	0	0
†Pawnee..........												
Phillips	1	0	0	0	0	0	4	0	0	0	0	0
Pottawatomie ...	0	0	0	0	0	0	7	0	11	0	0	0
Pratt.	0	0	0	0	0	0	2	0	6	0	5	0
*Rawlins..........												
Republic.........	2	0	0	0	7	1	1	0	48	0	0	0
Reno	0	0	8	0	0	0	2	0	0	0	0	0
Rice.............	0	0	0	0	0	0	3	0	1	0	0	0
Riley	2	0	0	0	5	1	2	0	0	0	0	0
†Rooks												
*Rush												
Russell...........	0	0	0	0	1	1	0	0	0	0	0	0
†Saline............												
Scott.	1	0	0	0	0	0	0	0	0	0	1	0
Sedgwick	6	3	0	0	4	1	1	0	31	0	1	0
†Seward												
Shawnee	0	0	0	0	3	0	11	1	0	0	0	0
†Sheridan........												
†Sherman												
Smith	3	3	1	1	1	0	0	0	0	0	0	0
Stafford..........	1	1	0	0	0	0	5	0	3	0	0	0
‡Stanton												
Stevens	1	1	0	0	0	0	0	0	0	0	0	0
Sumner...........	2	2	0	0	1	0	2	0	2	0	2	0
Thomas	0	0	0	0	0	0	1	0	0	0	0	0
Trego	0	0	0	0	0	0	3	0	0	0	0	0
Wabaunsee.......	0	0	0	0	2	0	0	0	0	0	0	0
Wallace	2	0	0	0	0	0	0	0	0	0	0	0
Washington......	0	0	0	0	0	0	1	0	0	0	0	0
†Wichita												
Wilson	1	0	2	0	3	0	0	0	0	0	0	0
Woodson.........	0	0	0	0	1	0	0	0	10	0	0	0
Wyandotte.......	0	0	0	0	1	0	0	0	2	0	0	0
Cities:												
Atchison	1	1	2	0	2	0	3	0	7	0	0	0
Kansas City....	12	12	28	6	16	1	2	0	1	0	10	0
Leavenworth ..	3	3	1	1	18	1	4	0	1	0	1	0
Topeka	0	0	0	0	6	0	4	0	0	0	0	0
Wichita........	0	0	0	0	4	1	1	0	26	0	0	0
State Institutions,	4	4	0	0	0	0	0	0	0	0	0	0
Totals.....	87	57	59	11	148	20	166	4	233	0	143	1
For February, 1905,	0	0	44	12	44	5	182	4	689	4	0	0

* No report. † No contagious diseases in county. ‡ No health officer.

THE NECESSITY FOR A NATIONAL PURE-FOOD LAW.

An address before the fifth annual convention of the International Stewards' Association, by Mr. Eugene Girard, official experimentalist.

You see before you samples of some of the food which I have analyzed. Of the 233 samples taken in hand, 76 were milk, 29 water, and 128 food, condiments, etc.

Of the first group, milk, sixteen samples were found containing chemical antiseptics, two were artificially colored, twenty-two showed less than 2.75 per cent. butter-fat, and thirty-eight were found to contain 3.3 per cent. or more butter-fat. The total average for the seventy-six samples was 3.7 per cent. butter-fat—a very fair showing in that respect, but unfortunately offset by the fact that, of all the seventy-six samples, only ten were found to be free from contamination.

The 128 samples of food analyzed you will find exhibited on the table before you. An examination will show that cane-sugar syrup is sold as pure maple syrup, or else that the pure article is adulterated by the addition of cane sugar or glucose. In the marmalades, preserves, jams and jellies were found salicylic acid, coal-tar dyes, saccharin, borates, sulfites, glucose, starch and starch paste, benzoates, benzoic acid, copper and alum salts, and formaldehyde. In vanilla extracts were coumarin and vanillin, etc.; in olive-oil was cottonseed-oil; and in mustard were wheat flour and turmeric. You will also note, in looking over the exhibit, several pieces of wool cloth curiously and brightly colored with poisonous mineral pigments extracted from food sold in the open market and labeled as pure orange marmalade, pure currant jelly, "blueberries canned where they grow," etc.

Does it seem possible that, in this century of enlightenment, so much dishonesty and crime are tolerated by the national or state governments?

Wherever man chooses to live, in Iceland or southern country, the food that grows there is best adapted to his wants under the local climatic conditions. Analyze wheat grown in northern climes and you will find that it contains more heat-producing elements than the wheat grown in southern climes. The same evidence is apparent in all that the soil produces.

That the preservation of food by chemical antiseptics has caused the loss of many lives is a fact which cannot be obliterated. So with the artificial coloring of foods. I could cite you many instances, but instead I have brought you living examples.

You may say that "a little coloring matter does n't do any harm," yet I took two pigs, or shoats, and fed them exactly the same food at exactly the same times and under exactly the same conditions, except that the food of one was pure and that of the other was colored in the same way and to the same extent as in some of the samples exhibited here. They started exactly the same, but one of the shoats now weighs 85 pounds against the other's 140 pounds. You may perhaps say that this is incidental; but I continued the experiments on rabbits and guinea-pigs, and you can see for yourself that those exhibited here are very far from being in good condition.

The most convincing result, though, was obtained from the experiment on the two dogs. I took two dogs, about the same age and in the same physical condition, so far as science can attest. The brown dog was just as lively as the other still is, but to his food we added the coloring matter and chemical preservatives found in the samples exhibited. To-day, as you will note, he is a perfect type of a dyspeptic in general appearance—the same ill-nourished look that is unfortunately only too familiar to all of us. Worse still, however, he is also covered with sores. Now look at the other dog—the one whose food has been free from adulterants and coloring matters—he 's in as fine shape as the most ardent dog lover could desire.

You may say it is a crime to inflict upon a brute such suffering, but I felt compelled to show you the results of the adulteration of foods, and I hope you will forgive me the crime of making the brute suffer for our own good. Now that he has demonstrated just what we have to fight against, I 'll cut out the poisonous elements of his present diet, and I 'll warrant you that in a few weeks he 'll again be the same jolly dog that he was formerly. But don't imagine that a dyspeptic who has been assimilating those poisons for years will recover as easily as this dog, who has only been up against them for a few weeks.

As the results show that artificial colors *are* harmful, and since they offer no value in compensation, why should we take any risk of impairing health and life by permitting their use?

I have said *national* law, because it is evident that the food commissioners have found it impossible to punish offenders who manufacture in one state and sell their products in another. We want a pure-food law that will definitely define a standard for every form, combination and mixture of food.

The attention of county and city boards of health is called to the law requiring publication of adulterated foods injurious to health.

PRESERVATIVES.

From the Bulletin of State Board of Health of Maine.

The question of the use of preservatives is a broad one. It should be viewed in a judicial and conservative spirit, that any legitimate lines of industry may not be injured. When, however, there are reasonable grounds for believing that any of the chemical agents used for the preservation or coloring of foods may prove detrimental to the users, the public health should be safeguarded by correct labeling, or prescription of maximum permissible quantity of these chemicals, or *absolute prohibition of use*, depending upon the nature of the article under consideration. Further experimental study of some of these preservatives is needed. Some recent work indicates very conclusively that one of them, SULFITE, whether of sodium or of calcium, is very dangerous. Meat containing this agent, in the proportion in which butchers and market men have been advised to use it, was fed to animals only six times a week. They remained in apparent health some time, but, killed and examined twenty weeks after the feedings began, the kidneys were found to have suffered serious degenerative changes. The mortality rate from Bright's disease and other diseases of the kidneys is already too heavy, without help from the use of preservatives as prejudicial as this appears to be. It is claimed that, to give meat of a questionable age a nice red, fresh appearance, it is quite generally used in the preparation of sausages, Hamburg steak, and other meat preparations, and in some other food supplies.

GENERAL FOOD LAWS OF KANSAS.

General Statutes, 1901.

§ 2277. **Diseased and Unwholesome Provisions.** If any person shall knowingly sell any diseased, corrupt or unwholesome provisions, whether for meat or drink, without making the same fully known to the buyer, he shall be punished by imprisonment in the county jail not more than six months, or by fine not exceeding one hundred dollars.

§ 2278. **Adulteration of Food or Liquor.** If any person shall fraudulently adulterate, for the purpose of sale, any substance intended for food, or any wine, spirit, malt liquor, or other liquor intended for drinking, with any substance injurious to health, he shall be punished by imprisonment in the county jail not more than one year, or by fine not exceeding three hundred dollars; and the article so adulterated shall be forfeited and destroyed.

. . . .

DAIRY PRODUCTS.

§ 2317. **Diluted or Unclean Milk in Cheese Factories.** Whoever shall knowingly sell, supply or bring to be manufactured to any cheese manufactory in this state any milk diluted with water or in any way adulterated, or milk from which any cream has been taken, or milk commonly known as skim-milk; or whoever shall keep back any part of the milk known as "strippings"; or whoever shall knowingly bring or supply milk to any cheese manufactory that is tainted or partly sour from want of proper care in keeping pails, strainers, or any vessel in which said milk is kept clean and sweet, after being notified of such taint or carelessness; or any cheese manufacturer who shall knowingly use, or direct any of his employees to use, for his or their individual benefit, any cream from the milk brought to said cheese or butter manufacturers, without the consent of all the owners thereof, shall for each and every offense forfeit and pay a sum not less than twenty-five dollars nor more than one hundred dollars, with costs, to be recovered in a criminal action.

§ 2318. **Adulterated Milk in Butter or Cheese Factories.** That whoever shall knowingly sell to any person or persons, or sell, deliver or bring to be manufactured to any cheese or butter manufactory in this state any milk diluted with water or in any way adulterated, or milk from which any cream has been taken, or milk commonly known as skimmed milk, or shall keep back any part of milk known as "strippings," with intent to defraud, or shall knowingly sell milk the product of a diseased animal or animals, or shall knowingly use any poisonous or deleterious material in the manufacture of cheese or butter, shall upon conviction thereof be fined in a sum not less than twenty-five dollars nor more than one hundred dollars, and liable in double the amount of damages to the person or persons, firm, association or corporation upon whom such fraud shall be committed.

VINEGAR.

§ 2319. **Adulteration of Cider Vinegar.** Every person who manufactures for sale or exposes for sale as cider vinegar any vinegar not the product of pure apple juice known as apple cider, or vinegar not made exclusively of apple cider, or vinegar into which any deleterious substances, drugs or acids have been introduced, shall for each offense be punished by fine of not less than fifty nor more than one hundred dollars.

§ 2320. **Injurious Ingredients.** Every person who manufactures for sale, sells or offers for sale any vinegar which contains any preparation of lead, copper, sulfuric acid, or other ingredient injurious to health, shall for each such offense be punished by a fine not less than fifty nor more than one hundred dollars.

§ 2321. **Vinegar Used for Preserving Vegetables, etc.** The provisions of sections 1 and 2 (2319 and 2320) shall apply to all preparations of vegetables, fruits and other products, in which vinegar is one of the principal ingredients.

§ 2322. **Branding of Cider Vinegar.** Every person making or manufacturing cider vinegar shall brand on one head of the cask, barrel or keg containing such cider vinegar the name and residence of the manufacturer and the words *cider vinegar* and any person or manufacturer who brands any cask, barrel, keg or other vessel with the name of *cider vinegar* which contains any liquid other than pure cider vinegar, shall upon conviction be fined not less than fifty nor more than one hundred dollars for each barrel, cask, keg, or other vessel so branded.

§ 2323. **Adulteration of Food and Drugs.** That no person shall within this state manufacture for sale, offer for sale or sell any drug or article of food which is adulterated, within the meaning of this act.

§ 2324. **Terms "Drug" and "Food" Defined.** The term "drug" as used in this act shall include all medicines for internal or external use, antiseptics, disinfectants, and cosmetics. The term "food" as used herein shall include all articles used for food or drink by man, whether simple, mixed, or compound.

§ 2325. **Adulteration Defined.** An article shall be deemed to be adulterated within the meaning of this act: First, in case of drugs, if, when sold under or by a name recognized in the United States Pharmacopœia, it differs from the standard of strength, quality or purity laid down therein; second, if, when sold under or by a name not recognized in the United States Pharmacopœia, or other standard work of *materia medica*, it differs materially from the standard of strength, quality or purity laid down in such work; third, if its strength, quality or purity falls below the professed standard under which it is sold. In the case of food: First, if any substance or substances have been mixed with it so as to lower or depreciate or injuriously affect its quality, strength, or purity; second, if any inferior or cheaper substance or substances have been substituted wholly or in part of it; third, if any valuable or necessary constituent or ingredient has been wholly or in part abstracted from it; fourth, if it is an imitation of or is sold under the name of another article; fifth, if it consists wholly or in part of a diseased, decomposed, putrid, infected, tainted, or rotten animal or vegetable substance or article, whether manufactured or not, or, in the case of milk, if it is the product of a diseased animal; sixth, if it is colored, coated, polished, or powdered, whereby damage or inferiority is concealed, or if by any means it is made to appear better or of greater value than it really is; seventh, if it contains any added substance or ingredient which is poisonous or injurious to health, or any deleterious substance not a necessary ingredient in its manufacture; provided, that the provisions of this act shall not apply to mixtures or compounds recognized as ordinary articles of food, if the same be distinctly labeled as mixtures or compounds, and are not injurious to health, and contain no ingredients not necessary to the preparation of a genuine article of such mixtures or compounds, and from which no necessary ingredient in its preparation is eliminated.

§ 2326. **Sample for Analysis.** Every person manufacturing, offering or exposing for sale, or delivering to a purchaser, any drug or article included in the provisions of this act, shall furnish to any person interested or demanding the same, who shall apply to him for the purpose, and shall tender him the value of the same, a sample sufficient for analysis of such drug or article of food which is in his possession.

§ 2327. **Penalty.** Whoever refuses to comply upon demand with the requirements of section 4 (2326), or whoever violates any of the provisions of this act, shall be guilty of a misdemeanor, and upon conviction shall be fined not exceeding one hundred nor less than twenty-five dollars, or imprisonment not exceeding one hundred days nor less than thirty days, or both. And any person found guilty of manufacturing, offering for sale, or selling any adulterated article of food or drug under the provisions of this act shall be adjudged to pay, in addition to the penalties hereinbefore provided for, all necessary costs and expenses incurred in inspecting and analyzing such adulterated articles of which said person may have been guilty of manufacturing, selling, or offering for sale.

CANDY.

Session Laws of 1903, ch. 118.

SECTION 1. **Adulteration prohibited.** No person shall, by himself, his servant, agent, or employee, or as the servant, agent or employee of any other person or corporation, manufacture for sale, or knowingly sell or offer to sell, any candy adulterated by the admixture of terra alba, barytes, talc, or any other mineral substance, or by poisonous colors or flavors, or other ingredients deleterious or detrimental to health.

SEC. 2. **Penalty.** Whoever knowingly violates any of the provisions of this act shall be deemed guilty of a misdemeanor, and on conviction thereof be fined in a sum not exceeding one hundred dollars nor less than fifty dollars, or by imprisonment in the county jail not to exceed three months, or by both such fine and imprisonment; and, as a part of the judgment of the court, such candy so adulterated shall be forfeited and destroyed.

SEC. 3. **Prosecution.** It is hereby made the duty of the county attorneys of this state to appear for the state and to attend to the prosecution of all complaints under this act in all the courts in their respective counties.

SEC. 4. **Repeal.** All acts or parts of acts inconsistent with the provisions of this act are hereby repealed.

SEC. 5. **Date of effect.** This act shall take effect and be in force from and after its publication in the official state paper.

Published March 19, 1903.

BULLETIN
OF THE
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No. 4. APRIL, 1906. VOL. 2.

ANNUAL REPORT BULLETIN.

Interesting information inside. Read.

This bulletin has been delayed on account of moving the state printing plant.

The statistics as set forth in the annual report for 1905 are the most complete ever made in this office.

The third annual conference of county and munipical health officers with the State Board of Health will be held in the city of Topeka, in June, 1906.

The fourth annual conference of state and territorial boards of health with the public health and marine hospital service will be held at the New Willard hotel, Washington, D. C., May 23, 1906.

The embalmers' examining committee will meet in the rooms of A. G. Mueller, North Main street, Wichita, Kan., on Monday, June 18, 1906, for the purpose of examining applicants for state license. Sessionbegins at ten A. M. Fare, one and one-third, on certificate plan.

VITAL STATISTICS

Reported to the Kansas Board of Health for March, 1906.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever		Smallpox.		Measles.	
	Cases.....	Deaths...	Cases.....	Deaths...	Cases.....	Deaths...	Cases.....	Deaths...	Cases. .	Deaths...	Cases.....	Deaths...
Allen	1	1	0	0	0	0	0	0	8	0	3	0
*Anderson												
Atchison	1	1	0	0	0	0	1	0	0	0	0	0
*Barber												
Barton	2	0	7	0	1	0	2	0	4	0	0	0
Bourbon	3	3	0	0	1	1	1	0	2	0	0	0
*Brown												
*Butler												
Chase	0	0	0	0	2	0	0	0	0	0	0	0
Chautauqua	0	0	0	0	8	2	0	0	2	0	0	0
Cherokee	4	4	0	0	1	1	3	3	0	0	13	1
*Cheyenne												
Clark	1	0	0	0	0	0	0	0	0	0	0	0
†Clay												
*Cloud												
Coffey	4	3	0	0	0	0	0	0	1	0	0	0
†Comanche												
Cowley	3	3	1	1	0	0	0	0	14	0	5	4
Crawford	4	4	0	0	6	2	17	0	0	0	40	2
Decatur	0	0	0	0	0	0	1	0	0	0	0	0
Dickinson	0	0	0	0	0	0	1	0	5	0	0	0
Doniphan	1	1	0	0	4	0	0	0	8	0	0	0
Douglas	1	1	1	0	0	0	0	0	0	0	0	0
Edwards	1	1	4	1	0	0	0	0	0	0	0	0
†Elk												
Ellis	0	0	0	0	2	0	0	0	0	0	0	0
†Ellsworth												
*Finney												
†Ford												
Franklin	4	4	2	0	0	0	0	0	0	0	9	0
Geary	0	0	1	1	7	0	0	0	0	0	0	0
Gove	0	0	0	0	0	0	15	0	0	0	0	0
†Graham												
‡Grant												
†Gray												
‡Greeley												
Greenwood	0	0	0	0	1	0	1	0	0	0	0	0
†Hamilton												
Harper	0	0	0	0	0	0	11	0	0	0	10	0
Harvey	2	2	0	0	1	0	0	0	0	0	0	0
†Haskell												
Hodgeman												
Jackson	0	0	0	0	0	0	8	0	0	0	0	0
Jefferson	1	1	0	0	0	0	2	0	0	0	0	0
Jewell	0	0	0	0	2	0	0	0	0	0	0	0
Johnson	0	0	1	0	0	0	0	0	5	0	0	0
†Kearny												
Kingman	1	1	1	1	4	1	0	0	0	0	2	0
†Kiowa												
Labette	1	1	0	0	0	0	0	0	0	0	0	0
Lane	2	0	7	0	0	0	0	0	0	0	0	0

CONTAGIOUS AND INFECTIOUS DISEASES — Concluded.

Counties.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.	
	Cases.....	Deaths...	Cases.....	Deaths...	Cases.....	Deaths...	Cases.....	Deaths...	Cases.....	Deaths...	Cases.....	Deaths...
Leavenworth	0	0	0	0	1	0	2	0	14	0	0	0
†Lincoln												
Linn............	1	1	0	0	0	0	0	0	0	0	0	0
Logan...........	0	0	2	0	0	0	2	0	0	0	0	0
Lyon	6	4	1	0	3	0	15	1	0	0	2	0
Marion..........	0	0	0	0	1	0	1	0	0	0	2	0
Marshall.	3	3	1	0	4	2	10	2	0	0	6	0
McPherson.......	0	0	0	0	0	0	12	0	0	0	0	0
*Meade...........												
†Miami............												
Mitchell....... ..	2	2	0	0	8	3	0	0	3	0	4	0
Montgomery	2	2	1	0	0	0	0	0	10	0	3	0
*Morris...........												
†Morton..........												
Nemaha	1	1	1	0	0	0	9	0	2	0	0	0
*Neosho..........												
†Ness.............												
Norton..........	0	0	2	2	0	0	0	0	0	0	0	0
Osage	0	0	0	0	0	0	0	0	0	0	1	0
Osborne..........	5	0	0	0	1	1	1	0	0	0	0	0
Ottawa	1	1	1	1	0	0	0	0	0	0	0	0
Pawnee..........	0	0	1	1	0	0	0	0	0	0	0	0
†Phillips												
Pottawatomie ...	0	0	0	0	0	0	12	0	0	0	1	0
Pratt............	0	0	0	0	0	0	0	0	16	0	0	0
Rawlins..........	0	0	0	0	0	0	0	0	3	0	95	0
Republic........	0	0	0	0	0	0	0	0	12	0	0	0
Reno	0	0	0	0	0	0	14	0	0	0	0	0
*Rice.............												
Riley.............	1	0	0	0	2	0	2	0	0	0	0	0
*Rooks..........												
*Rush...........												
†Russell..........												
Saline...........	0	0	0	0	0	0	0	0	4	0	0	0
Scott..........	0	0	0	0	0	0	0	0	0	0	2	0
Sedgwick	0	0	0	0	0	0	0	0	14	0	0	0
†Seward												
Shawnee	0	0	0	0	1	0	5	0	2	0	0	0
Sheridan.......	0	0	0	0	0	0	7	0	0	0	0	C
†Sherman												
*Smith												
Stafford.........	1	1	0	0	2	0	3	0	0	0	0	0
‡Stanton												
Stevens	1	1	0	0	0	0	0	0	0	0	0	0
Sumner..........	0	0	0	0	1	0	4	0	5	0	0	0
Thomas	0	0	0	0	0	0	2	0	0	0	0	0
Trego	0	0	0	0	0	0	5	2	0	0	0	0
Wabaunsee.......	0	0	0	0	7	0	2	0	0	0	0	0
Wallace	0	0	0	0	0	0	0	0	3	0	0	0
Washington......	1	1	0	0	0	0	3	1	0	0	0	0
*Wichita												
Wilson	1	1	0	0	0	0	0	0	2	0	0	0
Woodson.........	3	2	0	0	2	1	0	0	0	0	0	0
Wyandotte.......	1	1	0	0	1	0	0	0	2	0	0	0
Cities:												
Atchison	4	4	0	0	0	0	0	0	3	0	0	0
Kansas City....	20	16	25	6	6	2	2	0	16	0	15	0
Leavenworth ..	5	5	1	1	16	2	11	0	5	0	0	0
Topeka	0	0	0	0	6	0	4	0	0	0	1	0
Wichita........	0	0	0	0	4	0	1	0	92	0	17	0
State Institutions,	8	0	0	0	0	0	0	0	0	0	0	0
Totals.....	103	77	61	15	106	18	192	9	262	0	231	7

* No report. † No contagious diseases in county. ‡ No health officer.

REPORTS OF STATE INSTITUTIONS, 1905.

State Hospital, Osawatomie. Number of inmates, 1248. Number of deaths, 162, as follows: Bright's disease, 5; tuberculosis, 25; paresis, 7; dementia, 23; mania, 15; nephritis, 2; carcinoma, 1; enteritis, 11; melancholia, 15; hemorrhage of the bowels, 3; mitral insufficiency, 2; apoplexy, 8; angina pectoris, 2; cardiac hypertrophy, 1; paralysis, 2; erysipelas, 2; cardiac hemorrhage, 3; gastritis, 2; dysentery, 3; epilepsy, 2; pelvic tumor, 1; edema, lung, 1; pulmonary hemorrhage, 1; asthma, 1; marasmus, 1; abscess of lung, 1; abdominal tumor, 1; pneumonia, 4; influenza, 1; unclassified, 4.—L. L. Uhls, M. D., *Superintendent.*

State Hospital, Parsons. Number of inmates, 344. Number of deaths, 44, as follows: Organic cardiac disease, 11; exhaustion, 8; epilepsy (single seizure), 5; broncho-pneumonia, 4; status epilepticus, 3; peritonitis, 3; lobar pneumonia, 2; hypostatic pneumonia, 1; pulmonary tuberculosis, 1; endocarditis, 1; leptomeningitis, 1; cerebral hemorrhage, 1; mulutiple sclerosis, 1; enteritis (chronic), 1.—M. L. Perry, M. D., *Superintendent.*

State Hospital, Topeka. Number of inmates, 1051. Number of deaths, 38, as follows: Tuberculosis, 6; cerebral hemorrhage, 1; chronic cystitis, 1; dysentery, 1; chorea, 1; exhaustion, chronic insanity, 8; organic cardiac disease, 2; paresis, 7; peritonitis, 1; pneumonia (bronchial), 1; pneumonia (lobar), 1; pulmonary edema, 1; senile gangrene, 2; senile dementia, 5.—T. C. Biddle, M. D., *Superintendent.*

State Soldiers' Home, Fort Dodge. Number of inmates, 552. Number of deaths, 26, as follows: Inflammation of the brain, 1; general paresis, 2; peritonitis, 1; abscess, 1; fatty degeneration of heart, 1; paralysis, 2; cirrhosis of liver, 2; chronic cystitis, 2; obstruction of bowels, 1; enterocolitis, 2; cerebral abscess, 1; cerebral apoplexy, 1; senile gangrene, 1; cancer, 2; inflammation of liver, 2; hypertrophy of liver, 1; tuberculosis, 1; gunshot wounds, 2.—J. B. Draper, M. D., *Superintendent.*

Boys' Industrial School, Topeka. Number of inmates, 214. Number of deaths, 1, from peritonitis.—H. W. Charles, *Superintendent.*

Soldiers' Orphans' Home, Atchison. Number of inmates, 158. No deaths.—E. L. Hillis, *Superintendent.*

State School for the Deaf, Olathe. Number of inmates, 215. No deaths.—H. C. Hammond, *Superintendent.*

State School for Feeble-minded Youth, Winfield, Number of inmates, 400. One death, from diphtheria.—I. W. CLARK, *Superintendent.*

State Penitentiary, Lansing. Number of inmates, 1173. Number of deaths, 11, as follows: Intermesenterea, abscess, 1; traumatic pneumonia, 1; consumption, 3; paralysis, 1; accident, 1; wood alcohol, 1; poisoning, 1; assassinated, 1; hemorrhage of stomach, 1; drowned, 1.—C. E. GRIGSBY, *Prison Physician.*

Total number of deaths occurring in state institutions, 283, of which 36 were from tuberculosis, 2 from dysentery, and 1 from diphtheria. There were 10 cases of typhoid fever reported for the year, and 25 cases of dysentery.

TUBERCULOSIS.

The "great white plague" claimed 965 victims in Kansas in 1905. This is a death-rate of 63.7 per 100,000 population of counties reporting. The rate is somewhat less than the average death rate of the Eastern or Southern states, some of which are as high as 175 per 100,000.

It must be remembered, also, that many of these cases come from other states, seeking the more favorable climatic conditions of altitude, sunshine, and dryness of atmosphere; hence the above death-rate does not represent the rate of native Kansans, which is impossible to tabulate from reports received.

Statistics from sanatoria for the past two years have developed the fact that from fifty to seventy-five per cent. of tubercular cases are cured by the sanatorium treatment. This would mean a saving of from 475 to 750 lives each year in Kansas by such treatment.

We truly believe that our state has a duty to perform in the matter of care for her tubercular poor. She provides for her insane, epileptics, and moral degenerates, and surely they are of no more value than those who suffer from tuberculosis; besides, the chances for cure and restoration to society as useful men and women are infinitely greater. We urge and pray that our next legislature make provision for a state sanatorium for tuberculosis.

The following counties report no deaths from consumption for 1905: Graham, Haskell, Johnson, Rush, and Trego.

DIPHTHERIA.

There were 1800 cases of diphtheria reported, with 251 deaths, which gives a mortality of 13.9 per cent. This death-rate, as compared with that of former years, is indeed gratifying, Before the days of antitoxin and the bacteriologist, this dread disease was feared by both laymen and physicians, with its mortality of 23 to 31 per cent., but with each succeeding year and the more general and early use of antitoxin, the death-rate gradually grows less. The largest number of cases of diphtheria occurred in the city of Leavenworth, 226; next following, in Topeka, 208; Kansas City, 102; Wilson county, 92; Nemaha county, 92; Montgomery county, 91. In the year 1904 there were 1054 cases, with 201 deaths, reported, giving a mortality of 19.07 per cent.

The following counties reported no diphtheria for 1905: Barber, Clark, Comanche, Edwards, Hamilton, Haskell, Hodgeman, Johnson, Kiowa, Lane, Lincoln, Logan, McPherson, Miami, Morton, Ness, Pawnee, Pratt, Rice, Scott, Seward, Sheridan, Stevens, and Thomas.

SCARLET FEVER.

There were 1359 cases of scarlet fever reported, with 76 deaths, making a mortality of 5.5 per cent. The disease for several years past has been very mild, and there is no doubt but that many cases were never reported by reason of the fact that no physician was called; hence, the death-rate is higher as reported than the probable facts (could they be known) warrant. There seems to be abundant clinical evidence to prove that in many of the fatal cases there was a mixed infection with diphtheria. In several of these cases such conclusions were confirmed by the findings of the bacteriologist. McPherson county reported the largest number of cases of scarlet fever—155; next, Republic county, 92; city of Topeka, 69; Riley county, 65; Marshall county, 61. In the year 1904 there were 2936 cases reported, with 194 deaths, giving a mortality of 6.6 per cent.

The following counties reported no scarlet fever for 1905: Barton, Clark, Coffey, Comanche, Edwards, Finney, Gove, Graham, Gray, Haskell, Hodgeman, Kearny, Kiowa, Lane, Meade, Morton, Ness, Scott, Seward, Stafford, Stevens, Wabaunsee, Wallace, and Wichita.

TYPHOID FEVER.

It seems to be impossible to obtain anything like an accurate report of the number of typhoid cases occurring in the state the past year. The death report from the disease is fairly accurate, numbering 397 deaths, which makes a death-rate per 100,000 population of counties reporting of 28.9. With improved sanitary measures adopted both in the cities and country, the careful disinfection of all excretions from typhoid patients, followed by effective fumigation of places and things after termination of all cases, the banishment of the fly from the house and the destruction of their breeding-places will do much toward lowering the number of cases of this preventable disease, but we may expect its perennial appearance as long as the cities of this fair state are permitted to continue the crime of polluting our streams with their sewage, from which most of the larger cities get their water-supply. Surely these 397 monuments erected in 1905 to commemorate such criminal practice must be a silent but urgent appeal to those who legislate to take the necessary steps to keep our streams pure and wholesome.

The following counties report no typhoid fever for 1905: Finney, Morton, Rush, Seward, Wabaunsee, and Wichita.

SMALLPOX.

There were 4116 cases of smallpox reported, with 33 deaths, giving a death-rate of 0.8 of 1 per cent. This is an exceedingly low death-rate as compared with that of 100 years ago, when this loathsome disease claimed its victims by the hundreds of thousands throughout the world, the death-rate often being as high as 50 per cent. However, there is little consolation in this fact to the bereaved of these thirty-three Kansans, when it is generally acknowledged by all authorities that smallpox is a preventable disease, and that a recent successful vaccination does give immunity from such disease. It is boldly asserted that there can be no warrant for a single death from smallpox; if people would use the ordinary precaution they exercise in the conduct of business or every-day life they would realize that a protection from this disease, which can be had at so little expense and pain, should not be overlooked or neglected under any pretext whatever. Counties reporting the largest number of cases of smallpox were: Marion, 405; Brown, 226; Geary, 200; Ellis, 179; Sedgwick, 175. The death-rate of cases reported for 1904 is as follows: 2860 cases, with 16 deaths, or 0.5 of 1 per cent.

The following counties reported no smallpox for 1905: Barber, Finney, Ford, Franklin, Gray, Haskell, Hodgeman, Kearny, Lane, Meade, Morris, Morton, Osage, Rawlins, Scott, Seward, Stevens, and Wallace.

CANCER.

The often-heard assertion that cancer is on the increase seems to be affirmed by the vital statistics of Kansas. In the year 1897 there were 188 deaths from this disease; in 1898, 178 deaths; in

1899, 190 deaths; in 1903, 284 deaths; in 1904, 363 deaths; and in 1905, 468 deaths, making a death-rate the past year of 31.8 per 100,000 population of counties reporting. From the report of a certain Eastern state, just received, we figure a death-rate of 58 per 100,000. However, it must be remembered that the average age of the population of our state is considerably below that of the older Eastern states, by reason of the constant stream of emigration of young blood, which may have a bearing on the subject, as cancer is known to be in the main a disease of the aged. Moreover, our gradually increasing average age may account for our increase of deaths from this disease.

There were 744 deaths due to external violence, of which number 116 were from suicide. The different methods selected for self-destruction were varied, but preference seems to be given to poison, shooting, and hanging. The various routes chosen were as fellows: Cutting instruments, 4; precipitation from height, 1; crushing, 4; drowning, 4; hanging or strangulation, 10; asphyxia, 6; poison, 34; firearms, 31; other methods not classified, 21.

The principal causes of death by accident were as follows: Railroad accidents, 108; gunshot, 78; mining, 52; homicide, 35; horses and vehicles, 20.

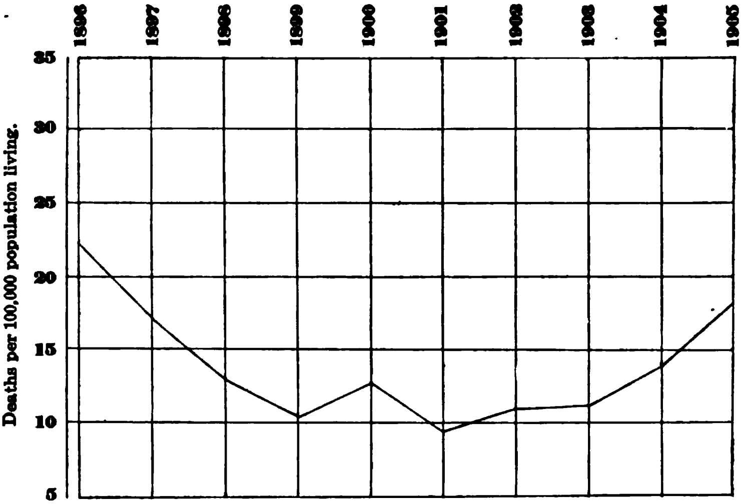
The simple, temperate and rural life of the majority of the people of Kansas, together with the splendid climatic conditions which obtain during the greater portion of the year, produce the ideal conditions which make for long life for her people. This fact is reflected in the vital statistics for 1905. Of the 9708 deaths whose ages are known, 4069 were over fifty years of age, or 41.9 per cent. The largest number of deaths occurring between any given period of ages was the period between sixty and seventy, which was 1298. Eight people reached the age of 100 years, and two were over 110.

The death-rate per 1000 population for 1905 was 7.5.

The following counties made no annual report for 1905: Anderson, Butler, Chautauqua, Ottawa, and Rooks. The tabulations of contagious diseases in these counties are compiled from the weekly and monthly reports received therefrom,

Reported Deaths from Diphtheria in Kansas for Ten Years, 1896–1905.

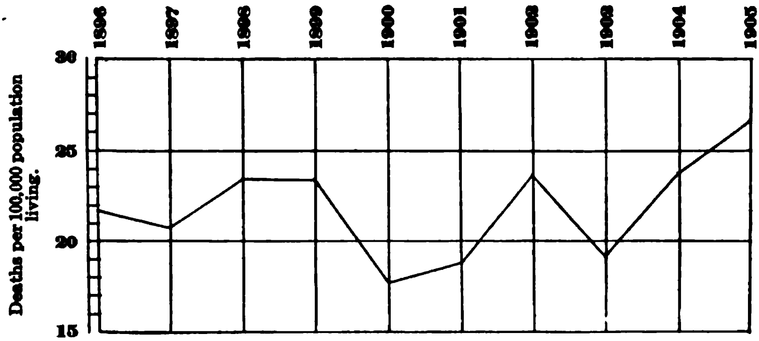
The number of deaths from diphtheria per 100,000 persons living, during each year for the ten-year period, 1896 to 1905, inclusive. Population taken from census returns, and only in counties reporting.



NOTE.—It is to be regretted that we are unable to make a table of comparison showing the mortality in diphtheria from cases reported, but as the tabulation of cases reported has only been completed for the past two years, such table cannot be made. The per cent. of mortality for cases reported for 1904 is 19.7 per cent., while that reported for 1905 is 18.9 per cent. The death-rate per 100,000, as indicated on the table for 1905, simply indicates that we were in the throes of an unusual epidemic of diphtheria during the fall and early winter of last year, and this death-rate bears no relation to the mortality rate of cases reported.

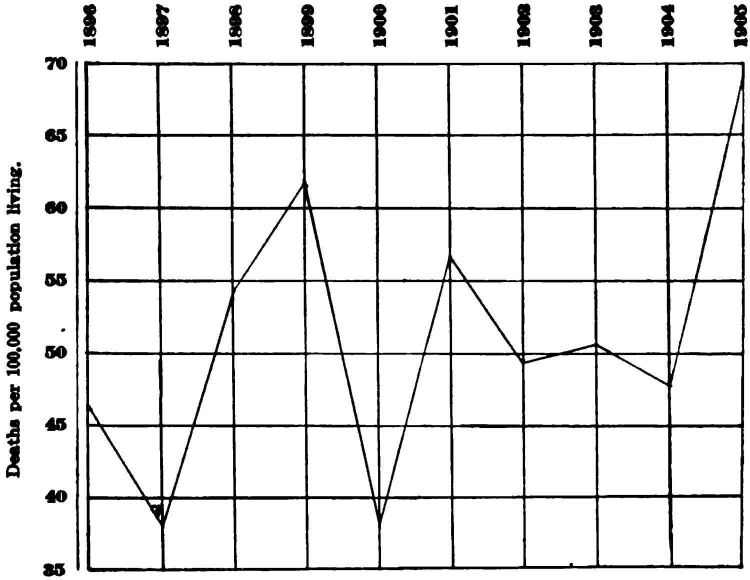
Reported Deaths from Typhoid Fever in Kansas for Ten Years, 1896-1905.

The number of deaths from typhoid fever per 100,000 persons living, during each year for the ten-year period from 1896 to 1905, inclusive. Population taken from assessors' returns, and only in counties reporting.



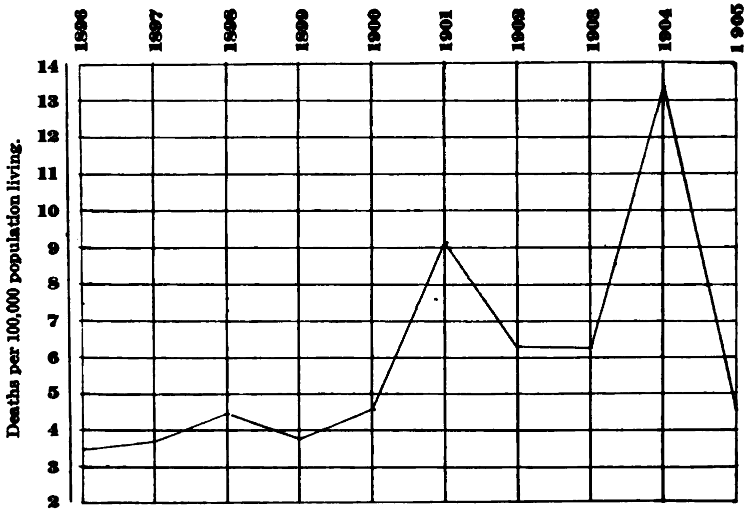
Reported Deaths from Tuberculosis in Kansas for Ten Years, 1896-1905.

The number of deaths from tuberculosis per 100,000 persons living, during each year for the 10-year period from 1896 to 1905, inclusive. Population taken from assessors' returns, and only in counties reporting.



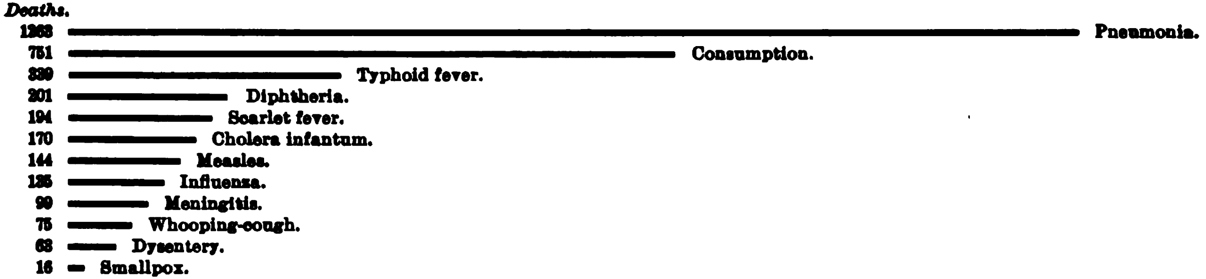
Reported Deaths from Scarlet Fever in Kansas for Ten Years, 1896-1905.

The number of deaths from scarlet fever per 100,000 persons living, during each year for the ten-year period from 1896 to 1905, inclusive. Population taken from assessors' returns, and only in counties reporting.

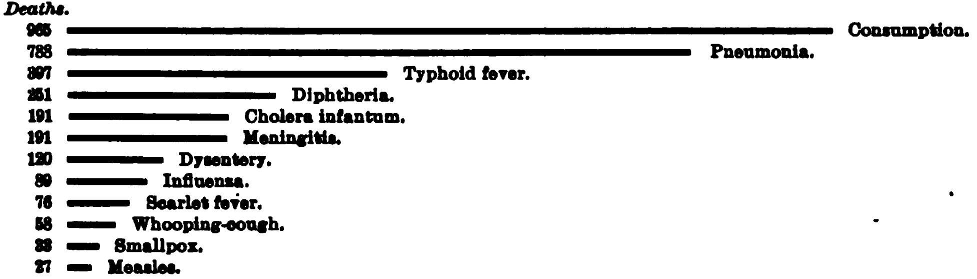


NOTE.—The statistics in this office do not permit a table of comparisons of mortality from cases of scarlet fever reported, as such statistics have only been gathered the past two years. The mortality from 2936 cases reported in 1904 was 6.6 per cent., while the mortality for 1107 cases reported for 1905 was 5.7 per cent.

COMPARATIVE TABLE showing relative importance of diseases of an infectious or contagious nature, as per mortality in each, for 1904:



COMPARATIVE TABLE showing relative importance of diseases of an infectious or contagious nature, as per mortality in each, for 1905:



SYNOPSIS OF REPORTS

FROM

COUNTY HEALTH OFFICERS.

SYNOPSIS OF REPORTS FROM COUNTY HEALTH OFFICERS FOR THE YEAR ENDING DECEMBER 30, 1905.

COUNTIES.	Population.	Health officer.	Address.	Communicable diseases for 1905. Diphtheria. Cases	Diphtheria. Deaths	Scarlet fever. Cases	Scarlet fever. Deaths	Smallpox. Cases	Smallpox. Deaths
Allen	29,210	R. O. Christian, M. D.	Iola	4	2	5	2	22	0
Anderson	13,152	D. M. Craig, M. D.	Garnett	......	....	......	....	......	....
Atchison	30,026	G. G. Brown, M. D.	Atchison	14	3	1	1	30	0
Barber	6,644	T. A. Coleman, M. D	Medicine Lodge	0	0	0	0	0	0
Barton	15,147	A. H. Connett, M. D.	Great Bend	1	1	0	0	25	1
Bourbon	25,015	R. Aikman, M. D.	Fort Scott	22	7	12	2	161	3
Brown	20,842	L. W. Shannon, M. D	Hiawatha	5	1	21	0	226	1
Butler	22,449	F. E. Dillenbeck, M. D.	El Dorado	......	....	......	....	......	....
Chase	7,390	F. T. Johnson, M. D.	Cottonwood Falls	10	1	19	0	5	0
Chautauqua	13,716	W. T. Courtwright, M. D	Sedan	26	2	15	2	34	0
Cherokee	40,318	Chas. S. Huffman, M. D.	Columbus	12	6	12	0	77	7
Cheyenne	2,844	G. R. Pegg, M. D.	Bird City	6	0	50	6	0	0
Clark	1,843	W. F. Taylor, M. D	Ashland	0	0	0	0	5	0
Clay	15,024	S. E. Reynolds, M. D.	Clay Center	5	1	38	3	3	0
Cloud	18,207	A. R. Marcotte, M. D	Concordia	3	0	5	1	20	0
Coffey	15,312	Wm. Manson, M. D	Burlington	2	0	0	0	14	0
Comanche	1,763	J. S. Halliday, M, D	Coldwater	0	0	0	0	9	0
Cowley	32,289	G. B. Kessler, M. D	Winfield	15	15	2	2	0	0
Crawford	48,271	C. A. Fisher, M. D.	Pittsburg	53	9	41	2	223	1
Decatur	9,349	Selden Miner, M. D	Oberlin	1	0	9	0	1	0
Dickinson	22,937	T. R. Conklin, M. D.	Abilene	25	3	31	3	3	3
Doniphan	14,124	W. W. Carter, M. D.	Wathena	16	4	1	1	8	0
Douglas	25,110	A. W. Clark, M. D.	Lawrence	6	2	11	0	47	1
Edwards	5,422	M. De Tar, M. D.	Kinsley	0	0	0	0	9	9
Elk	10,519	W. F. Flack, M. D.	Longton	51	9	5	1	1	0
Ellis	10,321	J. H. Middlekauff, M. D.	Hays City	36	6	31	2	179	1
Ellsworth	9,493	H. O'Donnell, M. D	Ellsworth	6	0	10	0	24	0
Finney	3,204	Andrew Sabine, M. D	Garden City	6	2	0	0	0	0
Ford	7,665	H. Whitworth, M. D.	Dodge City	1	0	2	0	0	0

Franklin	21,172	W. H. Wright, M. D	Ottawa	1	0	12	0	0	0
Geary	9,748	L. R. King, M. D	Junction City	7	2	3	0	200	0
Gove	3,353	J. F. McNaughton, M. D.	Gove City	2	0	0	0	45	1
Graham	6,410	A. H. Van Duyn, M. D	Hill City	2	0	0	0	150	0
Grant*	397	....	....	....	....	....	....	....	....
Gray	1,746	G. W. Hollembeak, M. D	Cimarron	2	2	0	0	0	0
Greeley*	603	....	....	....	....	....	....	....	....
Greenwood	15,647	E. J. Norman, M. D	Eureka	5	0	31	1	15	0
Hamilton	1,531	C. F. Harrison, M. D	Syracuse	0	0	5	0	1	0
Harper	11,929	W. Dio McPlee, M. D	Anthony	7	0	13	0	2	0
Harvey	17,171	J. W. Graybill, M. D.	Newton	10	1	9	2	15	0
Haskell	558	L. V. Miner, M. D.	Santa Fe	0	0	0	0	0	0
Hodgeman	2,590	A. B. Scott, M. D	Jetmore	0	0	0	0	0	0
Jackson	15,674	J. C. Shaw, M. D.	Holton	7	2	25	0	4	0
Jefferson	16,114	S. Johnston, M. D.	Oskaloosa	42	6	11	0	18	2
Jewell	17,382	Dorothy Allen, M. D.	Mankato	4	1	60	0	80	0
Johnson	16,006	H. H. Johnson, M. D	Olathe	0	0	6	1	25	0
Kearny	1,218	G. C. W. Richards, M. D.	Lakin	4	1	0	0	0	0
Kingman	11,331	J. W. Cheney, M. D	Kingman	20	2	6	0	56	0
Kiowa	3,525	J. A. Gardner, M. D.	Greensburg	0	0	0	0	2	0
Labette	30,845	R. M. Bennett, M. D	Mound Valley	16	6	16	0	10	0
Lane	2,324	J. H. Morgan, M. D.	Dighton	0	0	0	0	0	0
Leavenworth	38,880	E. S. Wood, M. D	Jarbalo	85	6	51	5	8	0
Lincoln	10,207	Alfred Hultner, M. D	Lincoln	0	0	5	1	47	0
Linn	15,585	J. G. Wortman, M. D	Mound City	4	2	1	1	49	1
Logan	2,357	H. Austin Stroup, M. D.	Winona	0	0	8	0	4	0
Lyon	24,253	J. M. Parrington, M. D	Emporia	12	2	50	1	86	1
Marion	19,984	G. P. Marner, M. D.	Marion	0	0	6	1	405	0
Marshall	22,972	W. R. Breeding, M. D.	Marysville	3	0	61	3	35	0
McPherson	21,205	G. R. Dean, M. D	McPherson	0	0	155	0	118	0
Meade	2,187	Wm. F. Fee, M. D.	Meade	2	0	0	0	0	0
Miami	20,744	L. A. Van Pelt, M. D.	Paola	0	0	15	0	120	2
Mitchell	12,671	Mary J. Lobdell, M. D.	Beloit	4	1	8	0	159	0
Montgomery	48,832	B. F. Masterman, M. D	Independence	91	14	5	0	45	0
Morris	11,519	W. E. Crawford, M. D.	Council Grove	1	0	24	2	0	0
Morton	211	Allan T. Coffman, M. D.	Richfield	0	0	0	0	0	0
Nemaha	20,066	Urban G. Iles, M. D.	Seneca	92	10	22	0	39	0
Neosho	24,215	U. G. Hoshaw, M. D	Chanute	40	4	12	2	72	2
Ness	5,383	C. Granville Egerton, M. D.	Ness City	0	0	0	0	100	1
Norton	10,655	G. W. Bronson, M. D	Almena	5	3	5	1	60	0
Osage	22,154	R. H. Miles, M. D.	Lyndon	18	3	18	2	0	0
Osborne	12,237	A. C. Dillon, M. D.	Osborne	13	0	18	0	11	0

SYNOPSIS OF REPORTS FROM COUNTY HEALTH OFFICERS—CONTINUED.

COUNTIES.	Population.	Health officer.	Address.	Communicable diseases for 1905.					
				Diphtheria.		Scarlet fever.		Smallpox.	
				Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...
Ottawa	10,887	A. L. Cludas, M. D.	Minneapolis	0	0	10	0	23	0
Pawnee	6,453	W. C. MacCurdy, M. D	Larned	0	0	17	0	8	0
Phillips	14,162	H. D. Brothers, M. D	Agra	6	1	35	1	27	0
Pottawatomie	16,164	W. P. Wilson, M. D	Westmoreland	31	1	9	0	100	1
Pratt	8,218	J. I. Douthart, M. D.	Pratt	0	0	10	0	19	6
Rawlins	5,042	L. G. Graves, M. D.	Atwood	4	0	3	0	0	0
Reno	30,735	Claud Mayfield, M. D.	Hutchinson	8	0	31	2	53	1
Republic	17,072	J. S. Billingsley, M. D	Belleville	27	2	92	0	108	0
Rice	13,929	C. E. Fisher, M. D	Lyons	0	0	25	0	4	0
Riley	13,735	J. D. Colt, M. D.	Manhattan	44	2	65	1	20	0
Rooks	9,482	W. B. Callender, M. D	Stockton	0	0	6	0	39	1
Rush	6,744	W. H. Ferguson, M. D	La Crosse	6	1	4	0	10	0
Russell	8,988	W. W. Bowlus, M. D.	Bunker Hill	1	1	20	0	45	0
Saline	19,454	N. D. Tobey, M. D.	Salina	7	0	15	1	124	0
Scott	1,777	Chas. J. Cahill, M. D	Scott City	0	0	0	0	0	0
Sedgwick	50,274	G. K. Purves, M. D	Wichita	20	3	18	0	175	0
Seward	1,035	Geo. S. Smith, M. D.	Liberal	0	0	0	0	0	0
Shawnee	55,842	D. T. Nicoll, M. D.	Topeka	59	7	31	4	18	0
Sheridan	4,540	F. A. Hall, M. D.	Hoxie	0	0	1	1	0	0
Sherman	3,576	F. H. Smith, M. D	Goodland	1	0	3	2	5	0
Smith	15,567	B. W. Slagle, M. D.	Smith Center	5	0	10	8	1	0
Stafford	10,361	J. P. H. Dykes, M. D.	Stafford	1	1	0	0	8	0
Stanton*	375	......	......	......	...	......	....	.....	....
Stevens	749	S. S. Holloway, M. D	Hugoton	0	0	0	0	0	0
Sumner	25,546	L. F. Harmon, M. D	Wellington	11	3	29	4	22	2
Thomas	4,506	V. C. Eddy, M. D	Colby	0	0	31	1	12	0
Trego	3,416	A. B. Jones, M. D	Wa Keeney	1	0	4	2	36	0
Wabaunsee	11,910	A. A. Meyer, M. D.	Alma	35	5	0	0	10	0
Wallace	1,134	E. P. B. Wilder, M. D	Sharon Springs	0	0	0	0	0	0

Washington	20,258	W. M. Earnest, M. D.	Washington	24	3	42	2	40	0
Wichita	1,505	J. F. White, M. D.	Leoti	2	1	0	0	7	0
Wilson	18,528	F. M. Wiley, M. D.	Fredonia	92	9	13	0	10	0
Woodson	9,482	H. W. West, M. D.	Yates Center	29	9	10	0	18	0
Wyandotte	92,798	L. D. Mabie, M. D.	Kansas City	30	5	0	0	25	0
Cities.									
Atchison†	....	G. G. Brown, M. D	....	.....	....	.....	....	.....	....
Kansas City	....	E. J. Lutz, M. D.	....	102	12	37	0	87	0
Leavenworth	....	J. F. Wallace, M. D.	....	226	12	5	0	12	0
Topeka	....	H. B. Hogeboom, M. D.	....	208	31	69	4	59	0
Wichita‡	....	G. K. Purves, M. D.	....	.....	....	.....	....	.....	....
Totals	1,544,968	....	....	1,800	251	1,359	76	4,116	33

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* No health officer.

† Included in report for Atchison county.

‡ Included in report for Sedgwick county.

SYNOPSIS OF REPORTS FROM COUNTY HEALTH OFFICERS—CONTINUED.

COUNTIES.	Communicable diseases for 1905.												Number of deaths from all causes.	Total number of births	Salary of health officer	Expenses incurred by counties in controlling contagious diseases
	Measles.		Typhoid fever.		Chicken-pox.		Cholera infantum.		Dysentery.		Consumption.					
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths				
Allen	0	0	14	5	10	0	0	0	0	0	5	3	12	......	$250 00	......
Anderson	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Atchison	3	0	6	4	1	0	2	2	4	4	16	16	180	230	500 00	$1,000 00
Barber	0	0	8	4	0	0	8	5	0	0	5	5	44	45	140 00	......
Barton	0	0	28	8	0	0	4	4	1	1	4	4	108	192	100 00	......
Bourbon	4	0	12	4	13	0	15	8	17	4	23	23	335	110	120 00	......
Brown	0	0	11	0	1	0	1	1	20	0	2	2	22	49	120 00	......
Butler	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Chase	0	0	82	7	0	0	8	3	6	2	17	5	54	74	40 00	......
Chautauqua	0	0	1	0	0	0	0	0	0	0	0	0	4	......	......	......
Cherokee	4	2	6	3	3	0	15	15	3	3	30	30	417	808	240 00	......
Cheyenne	20	1	19	0	0	0	34	0	1	0	2	2	13	......	......	......
Clark	0	0	5	0	0	0	0	0	0	0	1	0	10	24	25 00	......
Clay	1	1	4	3	0	0	6	6	0	0	14	12	192	60	120 00	150 00
Cloud	18	0	10	1	29	0	0	0	0	0	6	4	64	10	Nothing.	......
Coffey	0	0	13	1	1	0	9	6	2	1	14	14	143	48	75 00	96 00
Comanche	0	0	2	0	0	0	3	1	15	0	2	2	9	43	25 00	55 00
Cowley	4	4	9	9	0	0	2	2	3	3	24	24	368	......	Fees.	......
Crawford	12	1	60	25	4	0	27	8	16	5	37	36	507	......	......	......
Decatur	0	0	2	1	0	0	0	0	0	0	1	1	17	58	100 00	20 00
Dickinson	0	0	9	4	0	0	0	0	3	3	6	6	131	175	400 00	1,000 00
Doniphan	0	0	7	2	0	0	1	1	1	1	17	17	161	236	80 00	125 00
Douglas	2	1	32	5	0	0	0	0	2	1	21	21	300	256	Fees.	......
Edwards	9	0	82	8	28	0	3	1	35	3	11	8	68	71	40 00	197 00
Elk	0	0	1	1	0	0	0	0	0	0	4	4	52	131	75 00	200 00
Ellis	20	0	3	2	0	0	0	0	0	0	2	2	88	208	50 00	......
Ellsworth	0	0	0	0	0	0	0	0	0	0	0	0	83	136	......	......
Finney	0	0	0	0	0	0	0	0	0	0	3	3	38	40	Nothing.	......
Ford	1	0	3	3	1	0	13	11	2	2	12	12	128	180	50 00	......

Doniphan					1		4					5			2		1	4			2								
Douglas							3	1	1			3	3			1	1	2	1		2	2				1			
Edwards							1	1									3												
Elk				1								2						9									3		
Ellis		1		1			2											6									4		
Ellsworth							5		1			1																	
Finney								1								1		2			2								
Ford	2						1		1			1			1		2				3	1							
Franklin												13			2	11	2		2		12	9							3
Geary							1					3			1			2											
Gove										1												2						1	
Graham							2					1				1										1			
Grant																													
Gray														1				2	2										
Greeley																													
Greenwood																	6					1							
Hamilton																					1								
Harper	1			1	1		3									1	1										1		
Harvey	1						12											1			3	1							
Haskell																													
Hodgeman																	1												
Jackson	1					1	2					5		2				2											
Jefferson															1		1	6									1		
Jewell							1								1		5	1											
Johnson																					5								
Kearny															1			1											
Kingman											1				1			2											
Kiowa																							1						
Labette	1				1		1		1			2			1		1	6	1									1	
Lane																										2			
Leavenworth	2						17	2	1	1				2		1	1	6	2		1	2			1				
Lincoln						1		1				2																	
Linn					1		1								1			2											
Logan																													
Lyon					1							13			1	1	2	2	1		1								
Marion					1	2	4	1					1				1		1		4			2		3			
Marshall							4			1		4				2	2		1		1	1				1			
McPherson						6									1	1													
Meade									1					1			1												
Miami							1		1	1		1										3							
Mitchell	1											1		3	1	1	3	1											
Montgomery							1								1		1	14	1			1							

RETURN OF DEATHS BY COUNTY HEALTH OFFICERS FOR THE YEAR ENDING DECEMBER 31, 1905.

COUNTIES.	Abscess	Actinomycosis, trichinosis, etc.	Addison's disease	Alcoholism, acute and chronic	Anæmia, chlorosis	Cancer and other mal. tumors.							Other tumors (except of the female genitas)	Cholera nostras	Croup	Diabetes	Dysentery	Diptheria	Erysipelas	Exophthalmic goiter	Influenza (la grippe)	Intermittent fever and malarial cachexia	Chronic poisonings	Professional intoxications	Leukæmia	Measles	Membranous croup	Miliary fever	Rubeola, etc.
						Of the buccal cavity	Of the stomach and liver	Of the peritoneum, intestines, or rectum	Of the female genital organs	Of the breast	Of the skin	Of other organs and organs not specified																	
Allen																		2											
Anderson																													
Atchison			1				8		1						1		4	3	1								1		
Barber						1	1																				1		
Barton							4		1							1	1	1			2						1		
Bourbon						1	2					9		3	1		4	7			1						5		
Brown	1					1								1				1											
Butler																													
Chase								1									2	1				2							
Chautauqua																		2											
Cherokee	2			3	1		4							15	5	3	8	6	1		1	10	7			2	1		
Cheyenne																										1			
Clark							1																						
Clay						5	2									1		1			1	1				1	1		
Cloud					1	1	4	1													1								
Coffey	1			1			4	1			2						1		1		1							1	
Comanche							1																						
Cowley	1								1		7				1	1	8	15			2	1				4	1	2	
Crawford	2					2	1			1	1	7		7		1	5	9	1		5	7				1	6		
Decatur														1															
Dickinson						4										2	8	8											

Saline											2	2																	
Scott																	1												
Sedgwick			1	2	6		6	2	1	2	1	1	1		1	4	2	8	1		5				1		2		
Seward							1																						
Shawnee																		7											
Sheridan												2					8												
Sherman							1																						
Smith				2			1			1			1			1	8				6								
Stafford						1	2										1	1					2			2			
Stanton																													
Stevens																													
Sumner			2				8	1						2	3	4	3	8									4		
Thomas						1				1		1					1				1								
Trego						1										1						1					1		
Wabaunsee							1											5											
Wallace																													
Washington	1						9								1			8		1		2					1		1
Wichita						1												1											
Wilson							1			1							1	9					2						
Woodson								1	1			1					1	9											
Wyandotte							3										1	5		1						4			
Cities.																													
Atchison																													
Kansas City	2			2	1	4	11	6	9	2	2	2				3	6	12	3	6	2	3			3	1	2		
Leavenworth							15	1					1				2	12	2		2		2		1				
Topeka							17	2	1			13	3			9	3	31	3		4				1		2		
Wichita																													
Totals	24	1	4	14	19	58	206	33	24	18	16	113	12	56	38	67	120	251	27	9	89	52	15	2	8	27	40	10	9

RETURNS OF DEATHS BY COUNTY HEALTH OFFICERS—CONTINUED.

COUNTIES.	Abscess	Actinomycosis, trichinosis, etc	Addison's disease	Alcoholism, acute and chronic	Anæmia, chlorosis	Cancer and other mal. tumors.							Other tumors (except of the female genitals)	Cholera nostras	Croup	Diabetes	Dysentery	Diphtheria	Erysipelas	Exophthalmic goiter	Influenza (la grippe)	Intermittent fever and malarial cachexia	Chronic poisonings	Professional intoxications	Leukæmia	Measles	Membranous croup	Miliary fever	Rubeola, etc
						Of the buccal cavity	Of the stomach and liver	Of the peritoneum, intestines, or rectum	Of the female genital organs	Of the breast	Of the skin	Of other organs and organs not specified																	
Morris	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Morton	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Nemaha	....	....	....	....	....	....	6	1	1	1	....	5	....	....	....	3	13	10	....	....	1	3	....	....	....	....	....	....	....
Neosho	1	....	....	1	....	9	....	....	1	....	....	....	....	....	1	....	1	4	1	1	....	....	....	....	....	....	1	....	....
Ness	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Norton	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....	....	1	3	....	....	7	....	....	....	....	....	....	....	....
Osage	1	....	....	....	....	2	2	8	....	....	....	....	....	....	1	1	1	3	....	....	1	....	....	....	....	....	....	....	....
Osborne	....	....	....	....	2	....	1	....	....	....	....	....	....	....	....	1	8	....	....	....	....	....	....	....	....	....	....	....	....
Ottawa	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Pawnee	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Phillips	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....
Pottawatomie	....	....	....	....	....	....	3	....	....	....	....	....	....	1	....	....	3	1	....	....	1	....	....	....	....	....	....	....	....
Pratt	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....
Rawlins	3	....	....	....	....	3	....	....	....	....	....	....	1	....	....	....	....	....	....	....	2	....	....	....	....	2	....	....	....
Reno	....	....	....	....	....	7	3	1	....	....	....	....	....	4	1	2	....	....	....	....	1	....	....	....	....	1	....	....	....
Republic	....	....	....	....	1	1	2	....	....	4	....	1	1	....	2	3	2	1	....	....	....	....	....	....	....	....	....	....	....
Rice	....	....	....	....	....	1	4	....	....	....	....	1	....	5	....	3	....	....	....	....	3	....	....	....	1	....	....	....	....
Riley	....	....	....	....	....	....	1	....	....	....	....	3	....	....	....	....	1	2	....	....	2	....	....	....	....	....	....	....	....
Rooks	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Rush	....	....	....	....	1	1	3	....	....	....	....	....	....	2	1	....	....	1	....	....	....	....	....	....	....	....	1	....	....
Russell	....	....	....	....	....	....	1	....	....	1	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	....

Doniphan							1					17			2			5								7		2	1
Douglas		1			2				1			17	3	1	5	1	1		28		2		1	1		1		1	1
Edwards		1										8			8	2									1	1			
Elk						2	1					4			1														
Ellis		2			1		2		1			1	1		2	1										1			
Ellsworth						1						5			1					1								1	
Finney												3													1				
Ford												11		1	3	2			1							2		1	
Franklin												21			14										4				
Geary					1							4			2											1			1
Gove				1				1	1		2	1			3	1													
Graham															1														
Grant																													
Gray												1														1			
Greeley																													
Greenwood							1					4			7														
Hamilton												1			1		1		1		1								
Harper										1		8			4									1					
Harvey		1					3					8			5						1					4			
Haskell																													
Hodgeman												2			1											2			
Jackson		2										7			3				2							7			
Jefferson					3				2			2			1											2			
Jewell															1											2		1	
Johnson		2					1								3		2									5			
Kearny												1																	
Kingman												3			2														
Kiowa												1			2														
Labette					1							10			3				3						16	1		1	
Lane												4																	
Leavenworth		4	1		1	2	5					32		3	6	2			8		12					7		2	1
Lincoln						1	1					2			2				1										
Linn				5	2		1		1			11			3		1	1	2										
Logan															1														
Lyon					2		1		1			29			3	1	1		3	2					1	9		3	1
Marion					2	1	1			1		2		1	10				2	1					1				
Marshall		6			2		3					10		1	5			3	8		1					3			
McPherson											1					1													
Meade		1																			1							2	
Miami									2			1		1	1		2												
Mitchell				1	1							9			4				2	2				1		4			
Montgomery						1						3			6						5				1			4	

RETURNS OF DEATHS BY COUNTY HEALTH OFFICERS—CONTINUED.

COUNTIES.	Pott's disease.	Purulent infection and septicæmia.	Rabies.	Recurrent fever.	Rheumatism — acute, articular.	Rheumatism — chronic, and gout.	Scarlet fever.	Scrofula.	Smallpox.	Syphilis.	Tuberculosis. Of the larynx.	Tuberculosis. Of the lungs.	Tuberculosis. Of the meninges.	Tuberculosis. Abdominal.	Typhoid fever.	Whooping-cough.	Cerebral softening.	Other nervous diseases.	Congestion and hemorrhage of the brain.	Convulsions (not puerperal).	Convulsions of infants.	Diseases of the eye and its adnexa.	Diseases of the ear and its adnexa.	Encephalitis.	Epilepsy.	General paralysis.	Other forms of insanity.	Meningitis, simple.	Cerebro-spinal meningitis.
Morris	....	....	....	....	....	....	2	....	....	....	....	1	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Morton	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Nemaha	....	....	1	....	2	....	....	....	....	....	....	13	....	1	6	....	....	....	12	....	3	....	....	....	....	5	....	3	....
Neosho	....	....	....	....	....	....	2	....	2	....	1	7	1	1	7	....	....	....	....	....	....	....	....	....	2	....	....	....	2
Ness	....	....	....	....	....	....	....	....	1	....	....	1	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Norton	....	....	....	....	....	....	1	....	....	....	1	5	....	....	6	....	....	....	....	....	....	....	....	....	....	....	....	1	....
Osage	....	....	....	....	2	....	2	....	....	....	....	10	....	....	8	....	....	1	5	....	3	....	....	....	....	2	....	1	....
Osborne	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Ottawa	....	....	....	....	1	....	....	....	....	....	....	8	....	....	2	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Pawnee	....	....	....	....	....	....	....	....	....	1	....	6	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	2	....
Phillips	....	....	....	....	....	2	1	....	....	....	....	6	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	5	4
Pottawatomie	....	....	....	....	....	....	....	....	1	....	....	4	....	1	1	....	....	1	....	....	....	....	....	....	....	....	....	....	....
Pratt	....	....	....	....	....	....	....	....	....	....	....	2	....	....	2	....	1	....	1	....	....	....	....	....	....	1	....	....	1
Rawlins	....	2	....	....	....	....	....	....	....	....	....	4	....	....	2	5	2	....	8	....	....	....	....	....	....	2	....	....	....
Reno	....	....	....	....	2	....	2	....	1	....	....	22	....	....	3	....	1	....	3	1	....	....	....	....	....	....	....	4	1
Republic	....	....	....	....	....	....	....	....	....	....	....	7	....	....	2	....	....	1	7	3	....	....	....	....	....	....	....	1	....
Rice	....	....	....	....	....	....	....	....	....	....	....	4	....	....	5	....	....	....	2	....	....	....	....	....	....	....	....	3	....
Riley	....	....	....	....	....	2	1	....	....	....	....	13	....	....	8	....	....	....	....	....	....	....	....	....	....	....	....	....	2
Rooks	....	....	....	....	....	....	....	....	1	....	....	1	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Rush	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	2	....	....	....	....	....	....	....	....	....	....
Russell	....	....	....	....	....	....	....	....	....	....	....	2	....	....	2	....	....	1	....	....	....	....	....	....	....	....	....	....	....

Saline	....	....	....	....	1	2	1	....	....	1	....	9	....	....	4	....	....	....	1	....	....	....	....	....	1	5	....	....	2
Scott	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Sedgwick	....	4	....	....	....	....	....	....	....	1	1	94	....	....	8	....	....	....	6	....	2	4	1	1	....	7	....	....	1
Seward	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Shawnee	....	....	....	....	....	....	4	1	....	....	....	8	....	....	1	....	....	....	....	....	....	....	....	....	....	1	....	....	....
Sheridan	....	....	....	....	....	....	1	....	....	....	....	2	....	1	2	....	....	....	....	....	1	....	....	....	....	....	....	....	....
Sherman	....	1	....	....	....	....	2	....	....	....	....	1	....	....	....	1	....	....	2	....	....	....	....	....	....	1	....	....	....
Smith	....	1	....	....	....	2	....	....	....	....	....	10	....	1	5	....	....	....	....	....	2	....	....	....	2	3	....	1	....
Stafford	....	....	....	....	....	....	....	....	....	....	....	8	....	....	7	....	....	....	1	....	2	....	....	....	....	2	....	....	2
Stanton	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Stevens	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Sumner	....	5	....	....	....	....	4	....	2	....	....	12	2	2	6	2	....	....	....	....	....	....	....	....	7	5	....	....	3
Thomas	...	....	....	....	....	....	1	....	....	....	....	2	....	....	2	....	....	....	1	....	2	....	....	....	1	....	....	....	....
Trego	....	....	....	....	....	....	2	....	....	....	....	....	....	....	4	....	....	....	....	....	....	....	....	....	1	....	....	....	....
Wabaunsee	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1
Wallace	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Washington	....	2	....	....	1	....	2	....	....	....	1	11	....	1	2	1	....	....	....	....	2	....	....	....	....	....	....	....	3
Wichita	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Wilson	....	....	....	....	1	....	....	....	....	....	....	....	....	....	8	....	....	....	....	....	....	....	....	....	....	1	....	....	....
Woodson	....	2	....	....	....	....	....	....	....	....	....	4	....	1	1	1	....	....	....	....	1	....	....	....	1	....	....	....	1
Wyandotte	....	1	....	....	2	....	....	....	....	....	....	7	....	1	7	2	....	....	3	....	1	....	....	....	....	1	....	....	2
Cities.																													
Atchison	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Kansas City	3	13	1	....	1	....	....	....	....	3	9	98	16	14	98	16	....	....	24	5	6	1	....	7	2	5	1	11	25
Leavenworth	....	6	....	....	....	5	....	....	....	....	....	7	....	2	7	5	....	....	8	....	11	....	....	....	....	1	....	1	1
Topeka	....	14	....	....	2	....	4	....	....	....	....	18	1	1	18	4	....	....	19	....	3	....	1	....	....	23	1	....	11
Wichita	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Totals	8	76	8	11	44	27	76	2	33	8	19	883	27	36	397	58	17	31	180	24	66	5	8	13	53	174	4	65	74

RETURNS OF DEATHS BY COUNTY HEALTH OFFICERS—CONTINUED.

COUNTIES.	Cerebral meningitis	Spinal meningitis	Paralysis without specific cause	Progressive locomotor ataxia	Other diseases of the spinal cord	Tetanus	Affections of the arteries, atheroma, aneurism, etc	Affections of the veins, varices, hemorrhoids, phlebitis	Affections of the lymphatic system, lymphangitis, etc	Angina pectoris	Embolus and thrombosis	Endocarditis	Hemorrhages	Other diseases of the circulatory system	Organic heart disease	Acute bronchitis	Affections of the larnyx	Asthma	Bronchopneumonia	Chronic bronchitis	Congestion of the lungs (including pulmonary apoplexy)	Diseases of the nasal fossæ	Gangrene of the lung	Pleurisy	Pneumonia	Pulmonary emphysema	Other diseases of the respiratory apparatus (phthisis excepted)	Affections of the mouth and its adnexa	Affections of the pharnyx
Allen	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Anderson	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Atchison	....	....	4	2	2	....	....	....	....	1	....	....	....	....	15	2	....	4	....	....	....	....	....	....	12	....	4	....	....
Barber	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	5	....	....	....	....
Barton	....	....	4	....	....	....	1	....	....	....	....	4	....	....	6	1	....	1	....	....	....	....	....	1	7	....	....	....	....
Bourbon	....	....	20	....	....	1	....	....	3	....	30	....	....	....	....	8	....	....	....	....	6	....	....	....	34	1	2	1	....
Brown	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....	1	....	....	....	....	....	....	....	....	1	....	....	....
Butler	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Chase	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	7	....	....	....	....
Chautauqua	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Cherokee	....	....	....	....	....	....	....	....	....	1	....	....	4	....	21	6	....	5	....	....	3	....	....	....	36	....	....	....	....
Cheyenne	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Clark	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....
Clay	....	2	6	....	....	....	....	....	....	....	....	....	....	8	....	1	....	2	....	....	....	....	....	....	19	....	....	....	....
Cloud	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	10	....	1	....	....
Coffey	1	1	11	....	....	....	....	....	....	2	....	....	2	....	10	....	2	....	1	....	....	....	....	....	12	1	....	....	....
Comanche	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Cowley	4	....	....	1	....	1	1	....	....	1	3	....	1	....	33	....	....	....	....	1	....	....	....	....	22	1	....	....	1
Crawford	....	4	....	....	....	1	....	....	....	....	....	....	....	....	25	2	....	8	....	1	....	....	....	....	29	....	....	....	....
Decatur	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1	....	....	....	....
Dickinson	....	....	....	1	....	1	....	....	....	....	....	....	....	....	10	1	....	1	....	....	....	....	....	....	12	....	....	....	....

Doniphan	1	8				1		1				2			22	2		2		1					17		2		
Douglas			1	1	1	2				2		1			26	4		1	1						82		2		1
Edwards			1								2														2				
Elk	1		1											2				1							5				
Ellis																									5				
Ellsworth			1		1	1							5		8										4				
Finney			1				2					1			5	2				1					2				
Ford			8										1	4	5				1	1					8				
Franklin			4																12										
Geary	2	2	1	1											11										12				
Gove																			1										
Graham		1	2												4			1							2		2		
Grant																													
Gray																		1											
Greeley																													
Greenwood		1	2			1									4	1									1				
Hamilton															2														
Harper			2			1									5										2				
Harvey						1	2								15		1			1					7				
Haskell																1													
Hodgeman							2												2						1				
Jackson											1				12	2									10				
Jefferson															2														
Jewell																				1					6				
Johnson															11				2						20				
Kearny																													
Kingman	1		2			1									5										1		1		
Kiowa			2				1								2						2				2				
Labette						1									16				8						6		1		
Lane																													
Leavenworth													4		35	8		4	8	1	1				29				
Lincoln			2												8										5				
Linn			7												6										1				
Logan																													
Lyon						2	4				8				16			2							14		1		
Marion			2			1				1		2			8						1				7				
Marshall	1	1	2		1							2			1	1		4				1			8				
McPherson			1																						5				
Meade						1										1												1	
Miami															2														
Mitchell														2	5	1			1						11		1		
Montgomery			4		1		1						2		2			1							8				

RETURNS OF DEATHS BY COUNTY HEALTH OFFICERS—CONTINUED.

COUNTIES.	Cerebral meningitis	Spinal meningitis	Paralysis without specific cause	Progressive locomotor ataxia	Other diseases of the spinal cord	Tetanus	Affections of the arteries, atheroma, aneurism, etc	Affections of the veins, varices, hemorrhoids, phlebitis	Affections of the lymphatic system, lymphangitis, etc	Angina pectoris	Embolus and thrombosis	Endocarditis	Hemorrhages	Other diseases of the circulatory system	Organic heart disease	Acute bronchitis	Affections of the larynx	Asthma	Bronchopneumonia	Chronic bronchitis	Congestion of the lungs (including pulmonary apoplexy)	Diseases of the nasal fossæ	Gangrene of the lung	Pleurisy	Pneumonia	Pulmonary emphysema	Other diseases of the respiratory apparatus (phthisis excepted)	Affections of the mouth and its adnexa	Affections of the pharynx
Morris			1																										
Morton											1				1														
Nemaha						1						2	1	3	10	3	1	1							11				
Neosho			2							2					4	1									8				
Ness			1													1									2				
Norton															2			1							15				
Osage				1										14	2			2	5				1		4				
Osborne																													
Ottawa			3											4											1				
Pawnee			5															1	2										
Phillips			2												4				8										
Pottawatomie			1										4		4				2	3					7		1		
Pratt																									6		2		
Rawlins										4					3					2									
Reno			8			1	1					1	2		7			1							7				
Republic			2				2		1						6	1				2					14				
Rice										2					5	1									5				
Riley	1		6		2		1								17	2									8				
Rooks																													
Rush															2										3				
Russell															1										3				

Saline	2	1	8	....	1	....	....	....	....	....	1	....	....	1	9		....	....	8	....	....	....	....	....	8	1	....	....	1
Scott	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	2	....	....	....	....
Sedgwick	....	....	5	3	....	2	2	2	....	....	.	2	1	3	24	....	....	....	5	8	....	....	1	....	8	....	4	....	1
Seward	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Shawnee	....	....	....	1	1	....	....	....	....	....	....	....	....	....	1	....	....	1	1	....	....	....	....	....	1	....	....	....	....
Sheridan	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Sherman	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	....	....	....	....	5	....	....	....	....
Smith	....	....	....	....	....	....	....	2	....	....	....	2	....	....	4	4	....	....	....	....	....	....	....	....	....	....	....	....	....
Stafford	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....	....	1	8	....	....	....	....	....	4	....	....	....	....
Stanton	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....		....	....	....
Stevens	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Sumner	....	....	....	2	....	1	....	....	....	4	....	2	....	....	8	....	....	....	....	....	4	....	....	....	8	....	....	....	....
Thomas	....	....	1	....	....	....	....	....	....	....	....	....	....	....	4	....	....	....	....	....	1		....	....	1	....	....		....
Trego	....	....	....	1	....	....	....	....	....	....	....	....	....	....	5	....	....	....	2	....	....	....	....	....	2	....	....	....	....
Wabaunsee	....	....	....	1	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....		....	....	....	5	....	....	....	....
Wallace	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Washington	....	2	9	....	2	....	....	....	....	....	....	1	2	....	6	1	....	1	1	....	....	....	....	....	8	....	....	....	....
Wichita	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.	....	....	....
Wilson	....	....	1	....	....	....	....	....	....	....	....	....	....	....	2	....	1	....	2	....	1	....	....	....	5	....	....	....	....
Woodson	....	....	1	1	1		2	....	....	....	....	....	....	....	2	1	....	....	....	1	1	....	....	....	....	....	....	....	....
Wyandotte	....	....	....	....	....	1	....	....	.	....	....	....	4	....	2	....	....	....	....	....	1	....	....	1	2	....	....	....	....
Cities.																													
Atchison	....	....	....	....	....	....	....	.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Kansas City	9	4	12	1	....	4	2	1	....	4	3	39	1	8	48	11	1	3	11	....	8	1	....	....	121	2	....	3	1
Leavenworth	....	1	13	....	....	....	....	....	....	....	....	....	4	....	82	8	....	....	.	....	1	....	....	....	27	.	....	....	....
Topeka	....	3	....	2	....	....	....	....	1	1	....	4	4	8	60	....	....	2	1	1	2	....	....	....	60	2	....	....	....
Wichita	.	.	....	....	....	....	....	....	....	....	....	....	....	....	....		....		....	....	....	....	....	....	....	....	....	....	....
Totals	24	24	167	20	14	27	24	6	5	25	46	65	42	48	632	68	7	52	75	22	82	2	2	2	788	9	24	5	5

RETURNS OF DEATHS BY COUNTY HEALTH OFFICERS—CONTINUED.

COUNTIES.	Affections of the esophagus	Affections of the spleen	Appendicitis and abscess of the fossæ	Biliary calculi	Other affections of the liver	Cirrhosis of the liver	Diarrhea and enteritis (under five years)	Diarrhea and enteritis (over five years)	Hernia and intestinal obstructions	Other affections of the intestines	Icteris gravis	Intestinal parasites	Peritonitis (not puerperal)	Other affections of the digestive apparatus (cancer and tubercle excepted)	Ulcer of the stomach	Other affections of the stomach (cancer excepted)	Acute nephritis	Bright's disease	Other diseases of the kidneys and their adnexa	Calculi of the urinary tract	Cysts and other tumors of the ovary	Other diseases of the female genital organs	Diseases of the bladder	Diseases of the prostate	Metritis	Uterine hemorrhage (not puerperal)	Uterine tumor (not cancer)	Other diseases of the uterus	Accidents of pregnancy
Allen																													
Anderson																													
Atchison			5			1	2		1								1	7											
Barber			1															3		1									
Barton							2	3		6							1	1											
Bourbon			1		2						2	3	4			12	3	8					1				1		
Brown					1			1										2											
Butler																													
Chase															1														
Chautauqua																													
Cherokee					1					2			4	7		2	5	3	1										3
Cheyenne																													
Clark																													
Clay			3		2			6	1	2			1		1	2	3	7	1				1						1
Cloud			4												1		2	1	1										
Coffey				1	1		9	2					1	5				4	2										
Comanche																													
Cowley			1	1	1		2		2	3		4	4		9		2	11					1				2		
Crawford			3				28	12	5	26			3			8	2	6	11	2							1	2	
Decatur													2				1	1											
Dickinson							1		2								1	3											

Doniphan			1		1		4	1	1	2						4	2	2	2				2						
Douglas			2	1	1	1	8	3	5	3						4	2	10	1					2					
Edwards							7	8							1					1			1						
Elk			1															5					1						
Ellis																		2											
Ellsworth							2						4					1	2										
Finney													1					1											
Ford	1				4	2	11		4							1		2	1				4						1
Franklin			9						8										5	2									5
Geary			1						5									1											
Gove																													
Graham					1		4									1													
Grant																													
Gray							1		1									1											
Greeley																													
Greenwood							4	2				1						1											1
Hamilton						1			1				1					2											
Harper							2											8					1						
Harvey			2	2				1	1				1		3	2		2											2
Haskell																1													
Hodgeman						2																							
Jackson																		2											
Jefferson			1										1																
Jewell		1	2				6									1		1									1		
Johnson			4			3	12											5											5
Kearny																													
Kingman				1	1		8		2				1																
Kiowa			1				1		1																				
Labette			1			1		3					5	1				1											
Lane																													
Leavenworth			2			2	5	2	2				3		2	8	4	7											
Lincoln																	2												
Linn			1		8				1	6								2					2						2
Logan																													
Lyon			2				6		8	2					1	6		10					1					2	
Marion			1	1	3	2	2									1	2	8											
Marshall			8		1		6	2	1				1			2	3	4	4				2						
McPherson																													
Meade																													
Miami			1															2											
Mitchell				1			2				1		4	4		1	1	3	1										
Montgomery			1										4	5															

RETURNS OF DEATHS BY COUNTY HEALTH OFFICERS—CONTINUED.

COUNTIES.	Accidents of pregnancy	Other diseases of the uterus	Uterine tumor (not cancer)	Uterine hemorrhage (not puerperal)	Metritis	Diseases of the prostate	Diseases of the bladder	Other diseases of the female genital organs	Cysts and other tumors of the ovary	Calculi of the urinary tract	Other diseases of the kidneys and their adnexa	Bright's disease	Acute nephritis	Other affections of the stomach (cancer excepted)	Ulcer of the stomach	Other affections of the digestive apparatus (cancer and tubercle excepted)	Peritonitis (not puerperal)	Intestinal parasites	Icterus gravis	Other affections of the intestines	Hernia and intestinal obstructions	Diarrhea and enteritis (over five years)	Diarrhea and enteritis (under five years)	Cirrhosis of the liver	Other affections of the liver	Biliary calculi	Appendicitis and abscess of the iliac fossæ	Affections of the spleen	Affections of the esophagus
Morris																													
Morton																	1												
Nemaha						2	3					4		1			3			1	4		5	1	1	1	2		
Neosho												1	1									1	2				2		
Ness	3																			1				1					
Norton				1									1											1					
Osage												7	4										8		1	1			
Osborne																													
Ottawa											3	1																	
Pawnee	1											3					1		1					2			1		
Phillips					1						2	4					4					2	5			2			
Pottawatomie							1							3		1	1					2	2						
Pratt											1	3	1	3								1	4				1		
Rawlins		1	1		1			2			2	4	1		1				1		1								
Reno												2	2	5			1									4	2		
Republic			1			1						3	1								1		5		1		4		
Rice												3							1		2		4		1	1	1		
Riley							1					6	1	1			2			2		3	4		2				
Rooks																													
Rush																			1				2						
Russell														1										1					

Saline		1	1		3	1		2	2				6	1		3		4	5							3			1
Scott																	1												
Sedgwick	1		25	7	8	9	20	1	2	2			2	8	5	4	2	11			2	5	1	2				6	2
Seward																													
Shawnee																		6											
Sheridan			1				3	1							1														1
Sherman													2				1												
Smith			3			1	5		1						1		2	2					1	1					2
Stafford			3				6						1					5											
Stanton																													
Stevens					1												1												
Sumner			4			2										2		2											
Thomas									1							1		1											
Trego						1												3											
Wabaunsee																			2					1					
Wallace																													
Washington			3	1									2				1	4					1	1					
Wichita																													
Wilson			1					1									1	1											
Woodson							4						1			3													
Wyandotte			2		1	1			1					1				4					2						1
Cities.																													
Atchison																													
Kansas City	1	2	4	4	14	6	51	13	4	7	1		28		2	10	9	51		1	3		4	1		1	5		3
Leavenworth			1		1		2	1	3	3			3		1	8	1	15	1										
Topeka			8	3	3	2	13		2	1			17		2	26	4	17	6			1	1						
Wichita																													
Totals	3	4	123	32	59	41	70	69	45	69	6	8	120	28	32	117	72	304	54	7	5	8	32	11	2	5	12	11	33

RETURNS OF DEATHS BY COUNTY HEALTH OFFICERS—CONTINUED.

COUNTIES.	Puerperal hemorrhage.	Other accidents of labor.	Puerperal septicæmia.	Puerperal albuminuria and convulsions.	Other accidents of pregnancy, sudden death.	Furuncle (carbuncle)	Gangrene.	Phlegmon, warm abscess.	Other diseases of the skin and its adnexa (cancer excepted).	Affections of the bones.	Anthritis and other diseases (except tubercle and rheumatism) of the joints.	Amputation (for unspecified disease).	Other affections of the organs of locomotion.	Malformations (congenital).	Congenital debility, jaundice and sclerema (premature birth).	Lack of care, malnutrition, etc.	Other diseases of infancy	Senile debility	Absorption of deleterious gases (suicide excepted).	Other acute poisonings	Accidental drowning	Burning by fire.	Hot liquid (scald).	Dislocations	Electrical disturbances	Fractures.			Other fractures.
																										Of the skull.	Of the femur.	Of the vertebræ.	
Allen																													
Anderson																													
Atchison															3		1	9				1							
Barber										1		1						4			2								
Barton																						1							
Bourbon	2	1	3				2											14				3							
Brown																1													
Butler																													
Chase																		1				1							
Chautauqua																													
Cherokee	1		5	2											9		1	18		1	5		2		1				1
Cheyenne																													
Clark														1			1	2				1							
Clay			1											1	2			4		1	1								
Cloud			1											1				2											
Coffey			2													1		7			3	4							
Comanche			1																										
Cowley	2		4				7						5		15	9	1	33											
Crawford			2															2			5	1	2						
Decatur														1															
Dickinson			1				2									1	31	16											

Doniphan															1	1	6	1			8	1	1		2				
Douglas			8												11		1	20			1	3						1	
Edwards			1															7			1								
Elk			1																		1		1				1		
Ellis																1		2											
Ellsworth															2		18	8											
Finney															1	11	1								1				
Ford			1												1			6			4		2						
Franklin			2															7											
Geary		2					2										10	7			1								
Gove																		1											
Graham																		4				1							
Grant																													
Gray																													
Greeley																													
Greenwood			1	1													1	5											1
Hamilton															1			1										1	
Harper			1												3			4											
Harvey																		7		2							1		
Haskell																													
Hodgeman			1												8	2													
Jackson			1	1														5											
Jefferson																													
Jewell		1	1												3			5				3							
Johnson			4															15		5									
Kearny																													
Kingman																					1								
Kiowa																													
Labette													1				2	5											
Lane																													
Leavenworth							1		1					1	18	4		20			3	1				2		1	
Lincoln								1										5											
Linn																	8	5				1						1	1
Logan																													
Lyon			3															22		1	1								
Marion																		4								1			
Marshall				1	1										4		6	11			1								
McPherson																		12				1					1		
Meade														1				1											
Miami																		1			1								
Mitchell			2		1										2			9			3	4							
Montgomery			1		1																								

RETURNS OF DEATHS BY COUNTY HEALTH OFFICERS—CONTINUED.

COUNTIES.	Puerperal hemorrhage	Other accidents of labor	Puerperal septicæmia	Puerperal albuminuria and convulsions	Other accidents of pregnancy, sudden death	Furuncle (carbuncle)	Gangrene	Phlegmon (warm abscess)	Other diseases of the skin and its adnexa (cancer excepted)	Affections of the bones	Anthritis and other diseases (except tubercle and rheumatism) of the joints	Amputation (for unspecified disease)	Other affections of the organs of locomotion	Malformations (congenital)	Congenital debility, jaundice and sclerema (premature birth	Lack of care, malnutrition, etc.	Other diseases of infancy	Senile debility	Absorption of deleterious gases (suicide excepted)	Other acute poisonings	Accidental drowning	Burning by fire	Hot liquid (scald)	Dislocations	Electrical disturbances	Fractures.			Other fractures
																										Of the skull	Of the femur	Of the vertebræ	
Morris.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Morton.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nemaha	...	...	1	...	...	...	...	...	...	...	...	...	...	...	6	8	2	9	...	...	1	1	...	...	...	1	1	...	...
Neosho	...	...	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	2	1	...	...	...	...	...	...	...
Ness	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Norton	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...
Osage.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	2	...	10	...	...	5	8	...	...	...	...	...	...	...
Osborne	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ottawa	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...
Pawnee.	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	13	...	2	...	...	1	...	...	...	...	1	...	...	...
Phillips	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...	5	...	...	1	...	...	...	...	1	...	...	...
Pottawatomie	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	8	...	4	...	...	8	...	...	...	...	...	...	...	...
Pratt	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	13	2	...	1	...	...	...	...	...	...	...	...	...
Rawlins.	...	...	2	1	...	...	...	...	...	...	...	...	...	...	4	...	2	7	...	...	...	...	...	...	...	...	...	...	...
Reno.	1	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	...	...	2	...	...	...	...	...	...	...	...
Republic	...	...	8	...	...	...	...	...	...	...	...	...	...	...	7	7	...	17	...	...	...	...	...	...	...	...	...	...	...
Rice.	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	2	2	...	...	...	...	...	...	...	...	...	...	...
Riley	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	6	...	...	...	...	...	...	...	...	...	...	...
Rooks	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rush	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
Russell	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	2	1	...	...	1	...	...	...	...	...	...	...	...

Saline	....	....	2	....	....	....	....	....	....	....	....	....	....	2	4	4	....	14	....	....	1	1	....	....	1	....	....	....	....
Scott	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....
Sedgwick	1	....	4	....	....	1	2	....	....	2	....	3	1	2	36	15	10	18	....	....	1	2	1	....	....	2	....	1	....
Seward	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....
Shawnee	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....	....	....
Sheridan	....	....	2	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	....	....	....	....	....	....	....	....
Sherman	....	....	....	....	....	....	1	....	....	....	....	1	....	....	1	....	2	1	....	....	2	....	....	....	....	....	....	....	....
Smith	....	....	2	....	....	....	....	....	....	....	....	1	....	....	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....
Stafford	....	4	....	....	....	....	....	....	....	....	....	....	....	....	6	1	....	....	....	....	1	....	....	....	....	....	1	....	....
Stanton	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Stevens	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Sumner	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	2	....	10	....	....	....	....	....
Thomas	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	2	2		....	....	....	....	....	....	....	....	....	....
Trego	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Wabaunsee	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	3	....	....	....	....	....	....	....	....	....	....	....
Wallace	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	2	1	....	....	....	....	....	....	....	....	....	....	....
Washington	1	....	2	....	....	....	1	....	....	....	....	1		....	5	....	1	12	....	....	1	....	....	....	....	....	....	....	1
Wichita	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Wilson	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1	....	....	1	....	....	....	....	....	....	1	....	....	....	....
Woodson	....	....	1	....	....	....	....	....	1	....	....	....	....	1	2	2	....	3	....	....	....	....	....	....	....	....	....	1	....
Wyandotte	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6	....	....	2	....	....	....	....	....	....	....	....
Cities.																													
Atchison	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Kansas City	3	....	10	5	....	....	1	....	....	....	1	....	....	1	....	11	....	30	....	....	1	1	4	....	....	1	....	....	....
Leavenworth	....	....	....	....	....	1	....	....	....	....	....	....	....	1	35	5	2	29	....	....	3	5	1	....	....	2	....	....	....
Topeka	1	....	5	....	....	....	1	....	....	....	....	....	....	....	....	2	5	38	1	2	6	5	2	....	....	....	....	1	....
Wichita	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Totals	13	11	90	12	3	2	20	1	2	4	1	8	7	13	191	110	139	566	1	14	74	49	16	10	7	11	5	7	4

RETURNS OF DEATHS BY COUNTY HEALTH OFFICERS—CONTINUED.

COUNTIES.	Freezing	Inanition	Other accidental injuries	Dystocia (child)	Electric shock	Falls	Gunshot	Mining accidents	Railroad accidents and injuries	Vehicles and horses	Other external violence—homicide	Other accidents	Suicide. By poison	Suicide. By asphyxia	Suicide. By hanging or strangulation	Suicide. By drowning	Suicide. By firearms	Suicide. By cutting instruments	Suicide. By precipitation from a height	Suicide. By crushing	Suicide. By other methods	Sunstroke (insolation)	Dropsy	Sudden death (not puerperal)	Unspecified or ill-defined causes	Total number of deaths
Allen																										
Anderson																										
Atchison							4		1			8					1						7	8	34	180
Barber																	1						1		6	44
Barton													1											46	100	108
Bourbon		6	3		1		4		5		1		1								2		10		43	385
Brown																									2	22
Butler																										
Chase																										54
Chautauqua																										4
Cherokee	1	10					2	26	8		2	16	1								3		26		40	417
Cheyenne																									4	13
Clark																								1	1	10
Clay		1																					3	1	58	192
Cloud											1		1				1				2	1	6	6		64
Coffey		1								1			1		1		1					1	4		14	148
Comanche		3																								9
Cowley							2				1	20									4		10		86	368
Crawford		4				1	6	20	8		1	2	3			1	3								102	507
Decatur																									4	17
Dickinson																							2	3	42	131

Doniphan	....	1	....	....	1	2	....	....	2	1	2	....	1	....	....	....	....	....	....	....	....	....	3	....	4	161
Douglas	....	....	....	....	1	....	1	....	3	....	....	4	1	....	....	....	2	....	....	....	....	....	4	....	38	300
Edwards	....	....	....	....	....	....	....	....	3	1	....	....	....	....	....	....	1	....	....	....	....	....	....	....	3	68
Elk	....	1	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	11	52
Ellis	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	38
Ellsworth	....	....	....	....	....	4	....	....	....	....	1	....	1	....	....	....	1	....	....	....	....	....	....	....	2	83
Finney	1	2	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1	2	38
Ford	....	....	....	....	....	1	2	1	1	1	....	1	1	....	....	....	1	....	....	....	....	....	....	....	11	128
Franklin	1	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	....	....	....	....	....	....	3	....	90	240
Geary	....	....	3	....	....	....	1	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	2	....	4	85
Gove	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	18
Graham	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	5	37
Grant	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Gray	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	3	16
Greeley	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Greenwood	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	1	1	52
Hamilton	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	17
Harper	....	3	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	56
Harvey	....	....	....	....	....	....	1	....	3	....	....	....	....	....	....	....	1	....	....	....	....	....	6	....	24	125
Haskell	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3
Hodgeman	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	17
Jackson	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....	43	116
Jefferson	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	23
Jewell	....	....	....	....	....	....	....	....	....	1	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	46
Johnson	....	....	....	....	....	....	3	....	....	....	....	....	2	....	....	....	3	....	....	....	....	....	....	....	24	146
Kearny	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5
Kingman	....	....	....	....	....	....	....	1	....	1	....	....	....	....	1	....	3	....	....	....	....	....	....	....	15	50
Kiowa	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	2	19
Labette	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	31	130
Lane	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	16
Leavenworth	....	....	....	....	....	....	6	....	....	....	....	....	1	....	1	....	....	....	....	....	....	1	3	....	7	319
Lincoln	....	....	....	....	1	....	....	....	1	1	....	....	....	....	1	....	1	....	....	....	....	....	....	....	7	47
Linn	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	....	5	84
Logan	....	....	....	....	....	1	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4
Lyon	....	....	6	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	8	....	22	221
Marion	....	1	....	....	....	....	1	....	3	....	....	1	....	....	....	....	1	....	....	....	....	....	2	....	15	111
Marshall	....	....	....	....	....	....	3	....	2	....	....	2	1	....	....	....	....	....	....	....	....	....	2	12	19	179
McPherson	....	....	....	....	....	....	....	....	1	....	2	2	....	....	....	....	....	1	....	....	....	....	5	1	7	50
Meade	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	14
Miami	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	8	29
Mitchell	....	....	....	....	....	....	....	....	....	....	1	....	1	....	1	....	....	....	....	....	....	....	2	1	12	109
Montgomery	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	24	91

RETURNS OF DEATHS BY COUNTY HEALTH OFFICERS—CONCLUDED.

COUNTIES.	Freezing	Inanition	Other accidental injuries	Dystocia (child)	Electric shock	Falls	Gunshot	Mining accidents	Railroad accidents and injuries	Vehicles and horses	Other external violence—homicide	Other accidents	Suicide.									Sunstroke (insolation)	Dropsy	Sudden death (not puerperal)	Unspecified or ill-defined causes	Total number of deaths
													By poison	By asphyxia	By hanging or strangulation	By drowning	By firearms	By cutting instruments	By precipitation from a height	By crushing	By other methods					
Morris							1																		66	68
Morton																										3
Nemaha							1		1							2									26	210
Neosho							1		2	1			1		1								2		15	102
Ness																							2		11	27
Norton													1												51	109
Osage												3											7		35	168
Osborne																									93	105
Ottawa																					2		1		29	63
Pawnee																							5			52
Phillips							1		3	1		6											4		11	94
Pottawatomie		3															1								2	67
Pratt				1							1												4		14	72
Rawlins							2				2												5		7	86
Reno			2				2		4		4	2	2										5		61	199
Republic		2				1			2						1								3		8	182
Rice							1		2								1			1			1		17	88
Riley			2				1														1		6		16	129
Rooks																										
Rush																		1					1			20
Russell							1			1													1		3	32

Saline					2		4		3	1		1											2		9	150
Scott																										8
Sedgwick		10				4	5		2	1	3	8	2	1			1				1	1	8	5	19	581
Seward																										3
Shawnee																							1			34
Sheridan									1																	28
Sherman		2							1																4	35
Smith							1				1													2		90
Stafford							3				1						1						4	3	15	96
Stanton																										
Stevens																							1			4
Sumner		4																								129
Thomas							1		1																3	35
Trego											1															28
Wabaunsee									1	1															5	31
Wallace																										8
Washington		1							2	1													2		64	174
Wichita																										3
Wilson									2								1									47
Woodson		2																					1		4	63
Wyandotte		15						1															7		25	130
Cities.																										
Atchison																										
Kansas City		30				3	5		20		2		5	4		2	4	1	1	3		2	4	1	75	1,165
Leavenworth							2	2			5		1									1	8			337
Topeka						2	7	1	19	8	2	6	1	1	1			1			4	1	18	1	76	705
Wichita																										
Totals	4	103	16	1	7	19	78	52	108	20	35	82	34	6	10	5	31	4	1	4	21	8	218	45	1,677	11,608

OCCUPATIONS OF DECEASED.

COUNTIES.	Attorneys	Bakers	Barbers	Blacksmiths	Bookkeepers and clerks	Bricklayers	Butchers	Carpenters	Cigar-makers	Drivers	Druggists	Editors and writers	Electrical workers	Engineers	Engravers and artists	Farmers	Firemen	Housewives	Insurance agents	Jewelers and watchmakers	Laborers	Laundry employees	Linemen	Liquor-dealers	Machinists	Merchants
Allen																										
Anderson																										
Atchison			1	2												9		18			2			2	2	2
Barber								1								2		4								
Barton	1															17		21						1		
Bourbon																										
Brown																		2								1
Butler																										
Chase																4		2			1					
Chautauqua																										
Cherokee					1	1		4		1		1	1	1		37		111			8				1	2
Cheyenne																										
Clark																3		2								
Clay							1	1		1						38	1	26			7					
Cloud																										
Coffey	1			1	1		1	1								34		31			8					
Comanche																2		3								
Cowley																										
Crawford																										
Decatur				1												2		2								
Dickinson				1			1	2								28		25			14					
Doniphan				1				2								41		19		2	10				1	
Douglas	1			1				4	1					1		36		77			10	2		1	1	4
Edwards																18	2	11			11					1
Elk		1						2								3		11								
Ellis																5		11							1	
Ellsworth																										

Finney																7		7			3					
Ford		1	1		1			1								14		23			8					1
Franklin																										
Geary					1											10		19			8					1
Gove																6		4								
Graham							1									10		13								
Grant																										
Gray																8		4			1					
Greeley																										
Greenwood							1									5		13		1	1					1
Hamilton																1		8			1					
Harper		1						1								15		7			1					1
Harvey					1			1								9		22								
Haskell																										
Hodgeman								1								2		3								
Jackson								2								16		31								
Jefferson																3		3			2					1
Jewell																										
Johnson																25		25			8					1
Kearny								1																		
Kingman											1			1		6		13			1					
Kiowa																3		3								
Labette								2		1	1					20		27	2		15	1			1	2
Lane																										
Leavenworth																										
Lincoln																21		11			1					
Linn								2								15		28			4					
Logan																2					1					
Lyon	3							1								10		10			1					
Marion								1								34		29			8					3
Marshall				1	2			2	1		1					42		33			2			2		2
McPherson																										
Meade																1		2			1					
Miami																6		6			1					1
Mitchell					1											19		14			1			1		3
Montgomery								1				1				12		22								1
Morris																										
Morton				1							1															
Nemaha				1	2			1		1						34		35	1		8					
Neosho		1				1	1	3		1	1			2		9		7			4	1			1	1
Ness																8										
Norton								1								5										

OCCUPATIONS OF DECEASED—CONTINUED.

COUNTIES.	Attorneys	Bakers	Barbers	Blacksmiths	Bookkeepers and clerks	Bricklayers	Butchers	Carpenters	Cigar-makers	Drivers	Druggists	Editors and writers	Electrical workers	Engineers	Engravers and artists	Farmers	Firemen	Housewives	Insurance agents	Jewelers and watchmakers	Laborers	Laundry employees	Linemen	Liquor-dealers	Machinists	Merchants
Osage					1										1	33		39			2					2
Osborne																										
Ottawa																										
Pawnee								1								6		9		1						
Phillips																33		25			2					
Pottawatomie																19		12							1	1
Pratt				1												25		17								1
Rawlins																16		19			8					
Reno				1				1								31		39			8					5
Republic									1	1						26		48			7					4
Rice					2					1				1	1	16	1	20			10					1
Riley	2				1			1			1					22		3			8					1
Rooks																										
Rush								1								12		2		1						
Russell																18		9								
Saline					2					1	1		1			21		42	1		14					5
Scott																4		2								
Sedgwick	2			1	15		1	4	1	6	3			2		20	5	118	1		25	4			9	10
Seward																		2								
Shawnee							1									2		8				5				
Sheridan																8		8				2				
Sherman								1			1					4	1	10				4				1
Smith																										
Stafford				1						1				1		18		12				11				1
Stanton																										
Stevens																1		1								
Sumner						1					1			1		15		9				10				

Thomas					1											10		6								
Trego																										
Wabaunsee																7		5								
Wallace																1		2								
Washington	1															30		35								2
Wichita																1		1								
Wilson						1										6		5				8				
Woodson																4		25								
Wyandotte																32		25				3				2
Cities.																										
Atchison																										
Kansas City	2	1		4	13	9	16	20		8	2		2	4		33	2	251	1		216		1	6	8	9
Leavenworth		1			4			9	2	1						11		82			32			5	3	12
Topeka																										
Wichita																										
Totals	13	6	3	18	49	13	24	76	6	24	14	2	4	14	2	1,136	12	1,679	6	5	469	51	1	18	29	64

OCCUPATIONS OF DECEASED — CONTINUED.

COUNTIES.	Miners	Ministers	Molders	Nurses	Oil- and gas-well workers	Painters	Paper-hangers	Planing-mill workers	Physicians	Policemen	Printers and pressmen	Real-estate agents	Seamstresses	Steam-railway employees, office	Steam-railway employees, operating department	Stockmen	Street-railway employees	Shoemakers	Stenographers	Stone- and marble-cutters	Servants	Tailors	Tinners	Teachers	Not specified, and infants and children	Totals
Allen	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	12	12
Anderson	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	......	......
Atchison	....	....	1	....	....	1	....	....	....	....	1	....	2	....	2	....	....	....	....	1	1	3	....	....	180	180
Barber	....	....	....	....	....	....	....	....	1	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	34	44
Barton	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	68	108
Bourbon	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	395	395
Brown	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	19	22
Butler	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	......	......
Chase	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	45	54
Chautauqua	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	4
Cherokee	59	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	2	....	....	....	....	2	183	417
Cheyenne	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	......	......
Clark	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	10
Clay	....	....	....	....	....	2	....	....	....	....	....	....	....	....	2	....	....	....	....	1	....	....	....	....	112	192
Cloud	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	64	64
Coffey	....	....	....	....	....	1	....	....	2	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	61	143
Comanche	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	9
Cowley	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	368	368
Crawford	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	507	507
Decatur	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	10	17
Dickinson	....	1	....	....	....	....	....	....	2	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	56	131
Doniphan	....	1	....	....	....	....	....	....	....	....	1	....	....	....	....	1	....	....	....	1	....	....	....	....	81	161
Douglas	....	1	....	2	....	1	....	1	....	....	....	1	....	....	1	1	....	....	1	....	1	1	....	2	148	300
Edwards	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	17	63
Elk	....	1	....	....	....	....	....	....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	32	53
Ellis	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	20	38
Ellsworth	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	63	63

Finney		1							1																19	38
Ford						1									1							1			75	123
Franklin																									240	240
Geary				1											1									1	48	85
Gove																									8	18
Graham									1																12	37
Grant																										
Gray																									8	16
Greeley																										
Greenwood																									30	53
Hamilton							1		1							1								1	8	17
Harper													1	1											28	56
Harvey																4									98	125
Haskell																									2	3
Hodgeman																1					1				9	17
Jackson													1					1						1	64	116
Jefferson		1																							13	28
Jewell																									46	46
Johnson						1			2			1				2		1							80	146
Kearny																									4	5
Kingman	1						1																		26	50
Kiowa		1																							12	19
Labette											1							2							55	130
Lane																									16	16
Leavenworth																									319	319
Lincoln		1													1						1				11	47
Linn						1			1							1								1	31	84
Logan											1															4
Lyon											1				2			1							192	221
Marion																1					2				37	111
Marshall			1						1				2								1			2	77	170
McPherson																									50	50
Meade																1									9	14
Miami									1																14	29
Mitchell																					1			2	68	109
Montgomery																								1	53	91
Morris																									68	68
Morton																									1	3
Nemaha									2			1	1								5				118	210
Neosho					2			1	1						3										68	102
Ness											1														18	27
Norton									1																102	109

OCCUPATIONS OF DECEASED — CONCLUDED.

COUNTIES.	Miners	Ministers	Molders	Nurses	Oil- and gas-well workers	Painters	Paper-hangers	Planing-mill workers	Physicians	Policemen	Printers and pressmen	Real-estate agents	Seamstresses	Steam-railway employees, office	Steam-railway employees, operating department	Stockmen	Street-railway employees	Shoemakers	Stenographers	Stone- and marble-cutters	Servants	Tailors	Tinners	Teachers	Not specified, and infants and children	Totals
Osage	5	1				1			1		1									1					80	168
Osborne																									105	105
Ottawa																									68	68
Pawnee									1																34	52
Phillips																									34	94
Pottawatomie									1				1					1							31	67
Pratt																									28	72
Rawlins																4							1		38	86
Reno		2					1		2						1						1			2	105	199
Republic		1											1		1	1									41	132
Rice	1	1				1			1			2	2			3						1			23	88
Riley													1			1								1	90	127
Rooks																									7	7
Rush																									4	20
Russell																									5	32
Saline		1							1						1						3				56	150
Scott																									2	8
Sedgwick				1		6	3		2		2		2	1		2			3	8	20	5			299	581
Seward																									1	3
Shawnee	1		1															1		1					14	34
Sheridan																2		1							8	26
Sherman															1										12	35
Smith																									90	90
Stafford																					1	1			49	96
Stanton																										
Stevens																									2	4
Sumner		1							1												6				84	129

Thomas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12	35
Trego	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23	28
Wabaunsee	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	18	31
Wallace	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	8
Washington	...	...	...	...	...	...	...	...	...	...	1	.	2	...	8	2	...	2	...	...	...	...	...	2	78	159
Wichita	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	3
Wilson	...	...	...		2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	23	47
Woodson	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		...	...	...	...	...	...	34	63
Wyandotte	...	...	...	...	...	...	...	...	1	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	67	130
Cities.																										
Atchison	...	...	...	...	...	...	...	.	...	...	...	...	...	...	...	...	...	.		...	...	...	...	...	...	.
Kansas City	3	6	3	1	...	7	...	...	4	1	...	1	1	2	18	8	1	3	3	2	42	1	4	1	447	1,165
Leavenworth	9	...	2	...	...	...	...	...	3	...	.	2	...	...	...	...	...	...		1	23	...	...	...	134	337
Topeka		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	670	670
Wichita	...	...	...	.	...	...	...	.	...	...	.	...	...	...	...	...	...	...	...	...	...	...	...	...		.
Totals	79	21	8	5	4	24	6	1	39	1	12	11	17	4	39	39	1	13	10	16	112	13	5	19	7,379	11,606

Counties.	AGES OF DECEASED.																
	Under 1 year.	Between 1 and 2 years.	Between 2 and 5 years.	Between 5 and 10 years.	Between 10 and 15 years.	Between 15 and 20 years.	Between 20 and 30 years.	Between 30 and 40 years.	Between 40 and 50 years.	Between 50 and 60 years.	Between 60 and 70 years.	Between 70 and 80 years.	Between 80 and 90 years.	Between 90 and 100 years.	Between 100 and 110 years.	Above 110 years.	Unknown.	Totals.
Allen	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12	12
Anderson	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Atchison	33	3	7	8	4	9	9	12	15	8	32	29	9	2	...	...	...	180
Barber	6	2	4	1	2	5	4	5	2	2	2	3	1	...	...	...	5	44
Barton	22	4	1	3	2	7	5	5	5	10	10	11	9	1	...	...	13	108
Bourbon	...	10	20	19	11	18	27	27	35	32	56	55	14	10	...	1	...	335
Brown	1	...	...	...	...	...	1	1	...	4	...	2	2	...	...	...	11	22
Butler	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chase	1	...	...	...	...	...	...	...	...	...	5	...	1	...	...	...	47	54
Chautauqua	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cherokee	62	9	18	12	4	12	29	64	30	33	52	47	16	1	...	...	28	417
Cheyenne	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	13
Clark	2	...	1	...	...	1	...	...	...	...	3	1	2	...	...	...	...	10
Clay	15	9	7	3	4	6	10	13	10	22	25	29	18	...	...	...	21	192
Cloud	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	64	64
Coffey	21	5	5	3	2	5	18	7	4	15	23	24	10	1	...	...	...	143
Comanche	4	...	...	...	...	...	1	...	...	2	1	1	...	...	...	...	...	9
Cowley	76	17	14	21	9	13	35	30	21	31	37	41	23	...	...	...	...	368
Crawford	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	507	507
Decatur	4	1	...	...	1	1	...	4	2	1	2	1	...	...	...	...	...	17
Dickinson	27	6	2	6	3	6	9	4	5	9	17	18	16	...	...	...	3	131
Doniphan	17	9	5	3	5	8	12	12	6	18	25	20	15	...	...	...	6	161
Douglas	30	5	7	3	8	11	29	12	26	25	47	50	32	9	...	...	6	300
Edwards	8	5	2	3	1	3	7	6	5	6	9	...	...	...	...	...	8	63
Elk	6	2	5	1	4	1	3	4	...	6	9	6	4	...	...	...	1	52
Ellis	...	1	...	...	1	3	...	...	3	15	1	...	...	...	...	...	14	38
rth	20	5	...	1	...	3	9	3	6	6	6	12	10	...	...	...	2	83

Finney	9	2	...	2	3	1	1	6	2	1	5	5	1	...	...	...	...	38
Ford	27	7	2	2	2	4	12	7	3	6	21	22	4	1	...	...	3	123
Franklin	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	240	240
Geary	2	5	4	3	2	3	14	11	4	7	7	8	4	2	...	...	9	85
Gove	5	...	1	...	...	1	1	3	6	...	...	1	...	...	...	...	...	18
Graham	8	1	...	2	...	1	1	2	3	5	4	3	2	...	...	...	5	37
Grant	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gray	3	2	...	2	...	...	1	1	...	1	1	4	1	...	...	...	...	16
Greeley	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Greenwood	8	7	3	...	...	3	3	1	4	4	4	5	6	1	...	...	3	52
Hamilton	2	...	...	...	...	...	1	2	...	6	4	2	...	...	...	...	...	17
Harper	9	2	2	...	3	1	3	5	8	4	3	9	6	...	...	...	1	56
Harvey	25	3	2	3	5	1	4	10	13	12	19	23	4	1	...	...	...	125
Haskell	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Hodgeman	8	1	...	...	...	...	1	1	1	1	3	1	...	...	...	...	...	17
Jackson	1	4	...	3	1	1	7	6	4	7	8	21	12	1	...	...	40	116
Jefferson	...	1	...	4	4	3	1	...	...	1	1	6	1	...	1	...	...	23
Jewell	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	46	46
Johnson	5	3	1	1	2	...	2	10	11	35	46	28	2	...	...	...	...	146
Kearny	1	1	1	...	...	...	...	...	1	...	1	...	...	...	...	...	...	5
Kingman	9	5	3	3	...	2	5	3	3	4	4	7	2	...	...	...	...	50
Kiowa	8	2	1	...	...	2	2	...	...	1	1	2	...	...	...	...	...	19
Labette	6	2	5	1	2	7	15	12	19	12	18	21	7	...	...	...	3	130
Lane	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	16
Leavenworth	35	24	22	25	16	8	5	10	15	30	41	17	3	1	...	...	67	319
Lincoln	8	1	2	...	1	...	7	3	3	3	8	5	5	1	...	...	...	47
Linn	7	1	2	2	2	6	13	4	6	5	17	12	7	...	...	...	...	84
Logan	...	...	...	...	...	...	1	1	...	1	...	...	...	...	...	...	1	4
Lyon	37	12	9	3	5	5	15	19	16	17	26	24	17	3	...	...	13	221
Marion	6	3	2	...	7	4	11	5	5	25	17	15	6	...	...	...	5	111
Marshall	27	6	6	1	5	3	11	17	11	24	15	22	9	1	...	...	12	170
McPherson	11	1	...	6	4	...	...	8	...	7	6	2	5	...	...	...	...	50
Meade	5	2	1	1	...	...	1	...	...	1	1	...	...	1	...	...	1	14
Miami	2	...	...	...	...	1	3	3	1	3	6	4	3	...	...	...	3	29
Mitchell	15	5	3	3	5	5	8	3	2	12	12	14	4	...	...	...	18	109
Montgomery	14	7	5	4	5	6	14	6	6	5	9	5	5	...	...	...	...	91
Morris	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	68	68
Morton	...	...	...	...	1	...	...	1	...	...	1	...	...	...	...	...	...	3
Nemaha	33	8	11	16	6	9	14	10	9	17	27	28	12	1	...	...	9	210
Neosho	15	7	5	7	2	4	2	8	13	14	10	8	2	1	...	...	4	108
Ness	2	3	1	...	...	3	2	4	1	3	3	3	2	...	...	...	...	27
Norton	6	2	7	2	4	1	6	4	4	4	8	12	4	6	...	...	39	109

AGES OF DECEASED—CONCLUDED.

COUNTIES.	Under 1 year.	Between 1 and 2 years.	Between 2 and 5 years.	Between 5 and 10 years.	Between 10 and 15 years.	Between 15 and 20 years.	Between 20 and 30 years.	Between 30 and 40 years.	Between 40 and 50 years.	Between 50 and 60 years.	Between 60 and 70 years.	Between 70 and 80 years.	Between 80 and 90 years.	Between 90 and 100 years.	Between 100 and 110 years.	Above 100 years.	Unknown.	Totals.
Osage	20	5	2	5	2	10	12	13	9	17	15	16	13	3	....	....	26	168
Osborne	......	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	....	....	105	105
Ottawa	......	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	....	....	63	63
Pawnee	13	.....	2	1	1	1	4	3	3	5	5	9	4	....	....	....	1	52
Phillips	20	5	4	2	2	5	15	3	5	4	6	10	1	....	....	....	12	94
Pottawatomie	6	6	4	3	1	1	6	4	4	8	13	6	1	....	....	....	4	67
Pratt	11	..	1	1	5	8	3	.....	4	7	12	5	5	....	....	....	10	72
Rawlins	11	3	2	1	.....	2	1	1	6	12	9	3	4	....	....	....	31	86
Reno	27	8	6	3	2	6	26	18	18	19	25	19	9	1	....	....	12	199
Republic	31	8	4	5	2	8	6	8	7	13	18	17	15	....	....	....	.....	133
Rice	12	2	5	3	2	5	8	5	7	6	16	4	5	3	....	....	5	88
Riley	17	6	4	4	.....	5	12	9	9	21	19	11	9	1	....	....	.....	127
Rooks	......	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	....	....	7	7
Rush	1	3	.....	.....	.....	.....	2	1	.....	5	7	.....	1	....	....	....	.....	20
Russell	2	.....	.....	.....	.....	4	5	3	4	5	3	4	1	1	....	....	.....	32
Saline	13	4	2	4	2	8	21	11	8	19	13	23	14	8	....	....	.....	150
Scott	1	.....	.....	.....	2	1	1	1	.....	1	1	.....	.....	....	....	....	.....	8
Sedgwick	50	4	8	14	12	16	86	63	63	50	80	50	40	4	2	....	40	581
Seward	......	1	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	....	....	....	.....	3
Shawnee	......	1	3	7	2	1	3	.....	.....	3	3	11	.....	....	....	....	.....	34
Sheridan	......	3	2	.....	.....	3	4	2	2	1	1	.....	.....	....	....	....	8	26
Sherman	10	2	2	.....	1	.....	.....	.....	2	4	1	4	2	1	....	....	6	35
Smith	15	5	13	6	8	7	5	6	8	4	5	4	4	....	....	....	.....	90
Stafford	17	9	7	6	4	2	7	4	5	11	9	8	6	1	....	....	.....	96
Stanton	......	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	....	....	.....	.....
Stevens	......	.....	.....	1	.....	.....	.....	.....	.....	1	1	1	.....	....	....	....	.....	4
Sumner	......	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	....	....	129	129

Thomas	9	1	2	1	1	2	3	1	2	2	3	1	......	1	....	....	1	35
Trego	......	....	.....	....	......	......	......	......	......	......	....	....	......	....	....	....	28	28
Wabaunsee	5	3	2	6	......	......	......	2	.....	4	5	2	2	....	....	....	.....	31
Wallace	5	....	.....	....	......	.....	2	......	.....	.....	....	....	1	...	...	....	.....	8
Washington	15	5	5	1	2	1	15	12	18	7	30	27	9	....	....	....	17	159
Wichita	......	.....	1	.....	.....	.....	......	....	......	2	.....	....	.....	....	....	....	.....	3
Wilson	3	1	4	5	2	4	6	6	7	3	3	2	1	....	....	....	.....	47
Woodson	16	3	2	8	......	5	1	5	2	3	9	8	5	....	....	....	1	63
Wyandotte	26	6	5	3	5	4	5	16	9	11	13	16	10	....	1	....	......	130
Cities.																		
Atchison	....	....	.....	....	.....	.....	...	......	......	..	....	......	.....	...	....	....	.....	....
Kansas City	250	43	34	31	29	40	162	139	128	97	107	77	26	7	....	....	.....	1,165
Leavenworth	69	4	15	12	6	9	28	23	27	21	45	53	21	3	....	1	.....	337
Topeka	67	11	35	27	14	28	57	52	66	76	97	75	36	6	2	..	21	670
Wichita	......	....	.		....		......	.....	..	....	....	....	.	..	...	..	....	....
Totals	1,463	370	375	338	255	378	902	796	762	965	1,298	1,155	563	80	6	2	1,892	11,606

TO CLEAN UP THE FLIES.

There is a move on foot to knock out the house-fly. The scientists and bacteriologists and health officers are after the house-fly, and say that it is only a question of time until they have her going South.

Our sympathies are entirely with the knockers, but we are not betting on them. If we were to bet at all, we would place our hard-earned cash on the house-fly.

The female house-fly, which is really the only member of the family worth considering, is a bird of great perseverance and marvelous productive powers. She can arise in the morning, knock the dust out of her eyes with her front legs, then settle down to business, and by evening be the mother of some seven million anxious and energetic children. By the third day all of these offspring are ready to start in business on their own hook. It is very hard to keep up with a productive female of that kind. It is believed, however, that by doctoring the breeding-places of the house-fly her eggs can be destroyed before they are hatched, and in this way the family can be gradually exterminated.

As we have said, our sympathies are entirely with the knockers. The house-fly has no redeeming traits of character that we have ever discovered. She is the personification of insolence, and as a butter-in is without a peer. She is a foe to health and religion. She scatters disease and provokes unseemly profanity.

Crude oil is said to be fatal to the offspring of the fly. Crude oil mixed with the manure heap would make it impossible for the fly to build her nest there and rear her young. Down with the house-fly!—*The Farmers' Mail.*

In the public health reports of the marine-hospital service, under date of February 24, 1906, mention is made of experiments of a preparation called culicide for the destruction of mosquitoes. This culicide is a combination of camphor and carbolic-acid crystals in equal parts. This mixture is then evaporated over a kerosene stove or an alcohol lamp, the dish containing the culicide being placed six or eight inches from the frame, on the top of an ordinary piece of stovepipe, in the lower part a circular piece being cut out to furnish legs, and admitting air, and to prevent overheating.

It is necessary for the preparation to be sufficiently removed from the flame to prevent ignition. The room is prepared in the ordinary manner for disinfection.

As a result of the experiments made, Past Assistant Surgeon Goldberg arrived at the following conclusions, in which Past Assistant Surgeon Berry concurs:

1. Culicide in the proportion of four ounces per 1000 cubic feet, used for two hours with apparatus similar to that used by us, kills *Culex pungens*, *Stegomyia*, and *Anopheles maculipennis*, and temporarily stuns the house-fly.

2. In the proportion of three ounces to 1000 cubic feet, it does not always kill the *Anopheles maculipennis*.

3. Culicide takes fire spontaneously if heated sufficiently. It is therefore necessary to keep the liquid at a certain distance from the flame; it is also better to have more than one basin in a large space, and about eight ounces is the maximum quantity to use in one pan. All large cracks must be pasted up—the doors and windows, if loose fitting. Gummed paper spread under a window left light would be of great benefit. (I concur with Past Assistant Surgeon Goldberg as to the closing up of large cracks, but more for preventing weakening of the strength of the gas in the room by diffusion than from any belief that insects might escape from the room.)

4. In the hands of intelligent operators, and used according to the methods employed by us, it ranks next to sulfur as an insecticide in practical fumigation.

5. Culicide vaporizes and, later, cools, condensing on exposed surfaces again as it cools. Whether in this way it injures articles of gilt and the like was not investigated. In practical work, the only articles removed from rooms were foodstuffs and animal pets, and no complaint of injury was received. It gradually evaporates, leaving a persistent though not disagreeable odor.

As to the cost, with the present high prices of the ingredients of culicide, the cost of fumigating a room with four ounces to 1000 cubic feet is sixteen cents per 1000 cubic feet, as compared with sulfur of seven cents, and pyrethrum of fifty cents, using two pounds of each of the latter per 1000 cubic feet. The estimate does not take into consideration the alcohol used to evaporate the culicide, but this is not much more, if any, than that used to ignite pyrethrum or sulphur pots. A further saving in favor of culicide is that the apparatus can be carried easily in the hands from place to place. Had sulfur been used in the instances cited, a wagon would have been necessary to transport the materials, which were, in the case of culicide, conveyed in street-cars. The gang would have had to be larger to move the many articles from a house necessary to be removed in sulfur fumigation, to say nothing of the larger amount of pasting to be done. Likewise, at the end of fumigation, the time required to remove apparatus from the room is much less. For this and other reasons, if the cost of labor is counted, I do not believe culicide is much more expensive than sulfur, and, if the cost of the articles damaged by sulfur is considered, the difference would be in favor of culicide.

THE HOUSE-FLY.

Aside from the annoyance the house-fly occasions by its presence, together with the growing impression that flies are an indication of untidy housekeeping, it is now generally admitted by sanitarians that they are a positive menace to health, because they are the carriers of infection.

It has been found that the "specks" from flies feeding on tuberculum sputum were full of the tubercular bacilli. This affords a ready method of disseminating the dread seeds of consumption in our food and drink or wherever they might alight; moreover, their feet and wings have been found to convey the typhoid bacilli. The fly should be banished from the sick-room and the dining-room as thoroughly as the mosquito from the yellow-fever patient.

As the manure pile is the natural breeding-place of the house-fly, it should be removed frequently and scattered upon the ground, or the heap treated with successive layers of chlorinated lime and screened, if possible. Death to the house-fly!

DANGEROUS FOOD PRESERVATIVES.

From *The Healthy Home*, January, 1906.

"No other nation has made such marvelous progress in the science of chemistry as the Germans. It is an interesting fact that the great majority of the 152 kinds of preservatives now used in this country originated in Germany. It is also interesting to note the fact that, in spite of their recognized efficiency in preserving food, Germany will not allow her people to use one of them in the preservation of foods that are to be sold to her own people. Neither will she allow the use of coal-tar dyes. In other words, while Germany manufactures preservatives by the ton for other nations, she declines to allow her own people to be poisoned by these preparations.

"The agitation against the use of preservatives in this country has just begun. People have been lulled to indifference, because they have believed the claims of the manufacturers that a little 'preservaline'—in other words, a little salicylic and boracic acid and formaldehyde—would be harmless. Figures are presented, showing the very small quantities which would be taken by any individual, and so the public has been lulled into a feeling of security. Doctor Wiley's experiments with a 'poison squad' have refuted these false claims, and the question now arises, Who can show the proper way of escape from 'preserved' foods?

"Salicylic and boracic acids, benzoate of soda and other well-known preservatives are comparatively mild agents when compared with the latest and most popular one, known as formalin. This article is of great use in the preservation of mummies, and is very effective when used by undertakers as an embalming fluid.

"Miss Lakey, the club woman who is interested in the pure-food agitation, tells how a sample bottle of formaldehyde was sent to her as a part of her pure-food exhibit. She declared that it ate through the covering of the bottle, and that, if one only smelled it, it caused a burning sensation in the nasal passages for a long time. It is, of course, deadly in in its effects when taken in quantities. This is the article which, in moderate doses, is added to milk and has the property of keeping it from souring. Such milk when fed to babies looks and tastes pure and sweet, but is simply poison to little innocents."

DOGS AND CATS IN A SICK-ROOM.

It has been proven by several competent experimentalists that dogs and cats have been the medium for the conveyance of contagious diseases from the sick-room to the well, who were not exposed to the contagion in any other known way; therefore, health officers should make especial investigation concerning household pets in all cases of contagious disease and insist on the absolute quarantine of all such out of the house.

Annual meeting of the State Board of Health, June 21.

Third annual conference of county and municipal health officers with the State Board of Health, June 22.

Sessions to be held at the state-house, beginning at ten A. M. each day.

Members of the profession and the public in general are cordially invited to attend these meetings.

RULES OF THE KANSAS STATE BOARD OF HEALTH FOR THE TRANSPORTATION OF CORPSES, 1906.

These rules, having been adopted and properly published, have the full force of law. (See General Statutes of Kansas, 1901, § 6660, p. 1342.)

EXTRACT.

Rule 1. The transportation of bodies dead of small pox, Asiatic cholera, yellow fever, typhus fever or bubonic plague is absolutely forbidden.

Rule 2. The bodies of those who have died of diptheria, (membranous croup), scarlet fever (scarlatina, scarlet rash), glanders, anthrax or leprosy shall not be accepted for transportation unless prepared for shipment by being thoroughly disinfected by (*a*) arterial and cavity injection with an approved disinfectant fluid, (*b*) disinfecting and stopping of all orifices with absorbent cotton, and (*c*) washing the body with disinfectant, all of which must be done by an embalmer holding a certificate as such approved by the State Board of Health. After being disinfected as above, such body shall be enveloped in a layer of cotton not less than one inch thick, completely wrapped in a sheet and bandaged, and encased in an air-tight zinc-, tin-, copper- or lead-lined coffin or iron casket, all joints and seams hermetically soldered, and all enclosed in a strong, tight wooden box. Or, the body, being prepared for shipment by disinfecting and wrapping as above, may be placed in a strong coffin or casket and said coffin or casket encased in an air-tight zinc, copper or tin case, all joints and seams hermetically soldered, and all enclosed in a strong outside wooden box.

Rule 3. The bodies of those dead of typhoid fever, puerperal fever, erysipelas, tuberculosis, and measles, or other dangerous communicable disease, other than those specified in rules 1 and 2, may be received for transportation when prepared for shipment by filling cavities with an approved disinfectant, washing the exterior of the body with same, stopping all orifices with absorbent cotton, and enveloping the entire body with a layer of cotton not less than one inch thick, and all wrapped in a sheet and bandaged, and encased in an air-tight coffin or casket; provided, that this shall apply only to bodies which can reach their destination within forty-eight hours from time of death. In all other cases such bodies shall be prepared for transportation in conformity with rule 2. But when the body has been prepared for shipment by being thoroughly disinfected by an embalmer holding a certificate as in rule 2, the air-tight sealing may be dispensed with.

Rule 4. The bodies of those dead of diseases that are not contagious, infectious or communicable may be received for transportation when encased in a sound coffin or casket and enclosed in a strong outside wooden box, provided they reach their destination within thirty hours from time of death. If the body cannot reach its destination within thirty hours from time of death, it must be prepared for shipment by filling cavities with an approved disinfectant, washing the exterior of the body with the same, stopping all orifices with absorbent cotton, and enveloping the entire body with a layer of cotton not less than one inch thick, and all wrapped in a sheet and bandaged, and encased in an air-tight coffin or casket. But when the body has been prepared for shipment by being thoroughly disinfected by an embalmer holding a certificate as in rule 2, the air-tight sealing may be dispensed with.

Rule 5. In cases of contagious, infectious or communicable diseases, the body must not be accompanied by persons or articles which have been exposed to the infection of the disease, unless certified by the health officer as having been properly disinfected; and before selling passage tickets, agents shall carefully examine the transit permit and note the name of the passenger in charge, and of any others proposing to accompany the body, and see that all necessary precautions have been taken to prevent the spread of the disease.

Rule 8. Every disinterred body, dead from any disease or cause, shall be treated as infectious or dangerous to public health, and shall not be accepted for transportation unless said removal has been been approved by the state or provincial health authorities having jurisdiction where such body is disinterred, and the consent of the health authorities of the locality to which the corpse is consigned has first been obtained; and all such disinterred remains shall be enclosed in a hermetically sealed (soldered) zinc-, tin- or copper-lined coffin or box. Bodies deposited in receiving vaults shall be treated and considered the same as buried bodies.

Rule 9. For interstate transportation of dead, only embalmers holding license issued or approved by the state or provincial boards of health or other state or provincial authority provided for by law, under examination, shall be recognized as competent to prepare bodies for shipment.

Rule 31. The following regulations respecting the transportation of dead bodies for burial beyond the county where the death occurred will be observed: No body which has died of any infectious or contagious disease shall be received for transportation by any transportation company in this state unless it shall have been embalmed by an undertaker holding an embalmer's certificate properly signed by the president and secretary of the State Board of Health. Every undertaker shall enter the number of his embalmer's certificate upon every permit which he fills out. In all such cases the said board of health shall require the coupons attached to such permit to be detached and preserved by every common carrier, or the person in charge of any vessel, railway-train or vehicle to which dead bodies shall be delivered for transportation. No permit shall be issued for the transportation of bodies which have died of any infectious or contagious disease except in accordance with the foregoing rule. Any violation of these rules shall subject the offender to a fine of ten dollars for each offense.

IMPORTANT NOTICE.

Only licensed embalmers holding licenses from the State Board of Health are authorized to use the yellow pasters.

The yellow transit permit should be used in the transportation of all bodies dead of diseases specified in rule 2, and all in rule 3 where the body cannot reach its destination within thirty hours from time of death.

By order of the Board. S. J. CRUMBINE, M. D., *Secretary.*

Wealth and imperishable fame await the man
Who can banish the fly from the earth.

TO THE STORK.

"Here 's to the stork,
Good, industrious bird,
Who increases birth rates for all districts,
But works without avail
When bad physicians fail
To register all these vital statistics."
—California Bulletin.

"Here 's to the stork,
A most valuable bird,
That inhabits the residence districts.
He does n't sing tunes,
Nor yield any plumes,
But he helps out the vital statistics."
—Portland Oregonian.

"Here 's to the stork,
A benevolent bird,
Who would bless every home in each district,
But he 's sad and forlorn,
From evening to morn,
If unable to help with the vital statistics."
—Iowa Health Bulletin.

Here 's to the stork,
Anti-race-suicide bird,
Who thrice blest a home in this district.
He 's now merry and gay,
From morn to close of day,
For triplets help out the vital statistics.

BULLETIN
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W. J. V. DEACON, Statistician, Topeka.

No. 5. MAY, 1906. VOL. 2.

PROGRAM FOR THE ANNUAL CONFERENCE.

JUNE 21, 1906.

10:00 A. M.—Session State Board of Health.
2:00 P. M.—Session State Board of Health.
7:00 P. M.—Annual Banquet.

JUNE 22, 1906.

10:00 A. M.—Address of Welcome, by Governor Hoch.
Response.
"Relation of the Public to Boards of Health."
Discussion.
"The Pure-food Problem."
Discussion.
Question Box.

2:00 P. M.—"Examination of School Children."
Discussion.
"Disinfection Following Puerperal Fever."
Discussion.
"Sanitary Organization."
Discussion.
"Infection and Immunity in Disease."
Discussion.
"How to Build a Healthy Home."
Discussion.
"Typhoid Fever and the Local Board of Health."
Discussion.
"Adulteration of Drugs."
Discussion.
Miscellaneous.

VITAL STATISTICS

Reported to the Kansas Board of Health for April, 1906.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.	
	Cases.....	Deaths....	Cases.....	Deaths....	Cases...	Deaths....	Cases....	Deaths....	Cases...	Deaths....	Cases.....	Deaths....
Allen	1	0	1	0	0	0	1	0	7	0	0	0
*Anderson												
Atchison	1	1	0	0	0	0	2	0	16	0	0	0
Barber	1	1	0	0	0	0	8	1	2	0	0	0
Barton	0	0	14	0	0	0	5	0	3	0	0	0
Bourbon	4	3	1	1	0	0	0	0	4	0	0	0
*Brown												
Butler												
†Chase												
Chautauqua	0	0	0	0	1	0	0	0	7	0	12	0
Cherokee	3	3	0	0	0	0	1	0	1	0	6	0
Cheyenne												
†Clark												0
†Clay												
Cloud	0	0	1	0	3	0	0	0	0	0	0	0
Coffey	3	3	0	0	0	0	0	0	1	0	0	0
Comanche	1	1	0	0	0	0	0	0	5	0	0	0
Cowley	3	3	0	0	0	0	0	0	14	0	4	0
Crawford	3	3	0	0	0	0	1	1	0	0	0	0
†Decatur												
*Dickinson												
Doniphan	0	0	0	0	0	0	0	0	6	0	0	0
Douglas	2	2	0	0	0	0	0	0	0	0	0	0
Edwards	0	0	0	0	0	0	3	0	0	0	0	0
*Elk												
†Ellis												
*Ellsworth												
*Finney												
Ford	2	2	0	0	0	0	1	0	1	0	0	0
Franklin	2	2	0	0	2	2	0	0	0	0	0	0
*Geary												
†Gove												
†Graham												
‡Grant												
†Gray												
‡Greeley												
Greenwood	1	1	0	0	0	0	2	0	0	0	3	0
†Hamilton												
Harper	0	0	0	0	0	0	3	0	1	0	28	2
Harvey	1	1	0	0	0	0	2	0	2	0	0	0
†Haskell												
†Hodgeman												
Jackson	0	0	0	0	1	0	5	0	0	0	0	0
†Jefferson												
Jewell	1	0	1	0	2	0	0	0	7	0	0	0
Johnson	0	0	0	0	0	0	0	0	1	0	0	0
†Kearny												
Kingman	2	2	0	0	2	0	0	0	0	0	0	0
†Kiowa												
Labette	2	2	0	0	0	0	0	0	0	0	4	0
Lane	1	1	1	0	0	0	0	0	0	0	3	0

CONTAGIOUS AND INFECTIOUS DISEASES – Concluded.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.	
	Cases. . .	Deaths. . .	Cases. . .	Deaths. . .	Cases. . .	Deaths. . .	Cases. . .	Deaths. . .	Cases. . . .	Deaths. . .	Cases. . .	Deaths. . .
Leavenworth....	0	0	0	0	0	0	0	0	8	0	0	0
†Lincoln.........												
Linn............	1	1	0	0	0	0	0	0	0	0	0	0
*Logan............												
Lyon...........	0	0	0	0	0	0	0	0	1	0	0	0
*Marion..........												
Marshall.........	0	0	0	0	0	0	1	0	0	0	0	0
McPherson.......	0	0	0	0	2	0	10	0	0	0	0	0
†Meade.........												
Miami...........	2	2	0	0	0	0	0	0	0	0	0	0
†Mitchell.........												
Montgomery.....	0	0	0	0	0	0	0	0	22	0	2	0
*Morris...........												
Morton..........	0	0	0	0	0	0	0	0	0	0	2	0
Nemaha........	1	0	1	0	0	0	23	0	0	0	0	0
*Neosho..........												
Ness............	1	1	0	0	0	0	0	0	0	0	0	0
Norton..........	0	0	0	0	2	0	0	0	0	0	0	0
Osage............	0	0	0	0	1	1	0	0	2	0	0	0
Osborne..........	6	0	0	0	0	0	1	0	0	0	0	0
Ottawa.........	0	0	0	0	0	0	1	0	83	0	0	0
Pawnee..........	1	1	0	0	0	0	0	0	0	0	0	0
Phillips..........	0	0	0	0	0	0	21	0	0	0	0	0
Pottawatomie...	0	0	2	0	0	0	0	0	0	0	0	0
Pratt............	5	1	0	0	0	0	0	0	8	0	2	0
Rawlins..........	0	0	0	0	0	0	0	0	0	0	23	0
Republic........	1	1	0	0	0	0	2	0	15	0	0	0
Reno...........	0	0	0	0	0	0	0	0	2	0	0	0
*Rice............												
*Riley.............												
†Rooks.........												
Rush..........	0	0	0	0	0	0	0	0	4	0	6	0
†Russell.........												
Saline...........	1	1	0	0	0	0	0	0	0	0	0	0
†Scott..........												
†Sedgwick.......												
†Seward........												
Shawnee........	0	0	0	0	2	1	2	0	0	0	0	0
Sheridan........	0	0	0	0	0	0	10	0	0	0	0	0
Sherman.........	1	1	0	0	0	0	0	0	0	0	0	0
*Smith.........												
Stafford.........	3	2	1	0	3	0	0	0	5	0	1	0
‡Stanton..........												
‡Stevens..........												
Sumner..........	2	2	0	0	0	0	0	0	8	0	0	0
*Thomas..........												
Trego............	0	0	0	0	0	0	0	0	0	0	1	0
Wabaunsee......	1	1	0	0	1	0	0	0	0	0	0	0
Wallace........	2	0	0	0	0	0	0	0	4	0	0	0
Washington......	0	0	1	0	0	0	2	0	1	0	0	0
†Wichita..........												
Wilson..........	0	0	0	0	0	0	0	0	11	0	0	0
Woodson.........	1	1	0	0	0	0	0	0	0	0	0	0
Wyandotte.......	0	0	0	0	1	0	0	0	5	0	0	0
Cities:												
Atchison.......												
Kansas City....	30	12	30	2	6	0	0	0	9	0	6	0
Leavenworth..	5	5	0	0	8	0	8	0	0	0	0	0
Topeka.......	0	0	0	0	2	0	1	0	0	0	0	0
Wichita........	5	0	0	0	2	0	5	0	53	0	12	0
State Institutions,	0	0	0	0	0	0	0	0	0	0	1	0
Totals.....	103	62	54	3	41	2	121	2	268	0	118	2

* No report. † No contagious diseases in county. ‡ No health officer.

STUDY OF THE TYPHOID FEVER EPIDEMIC AT ELLINWOOD, KAN.

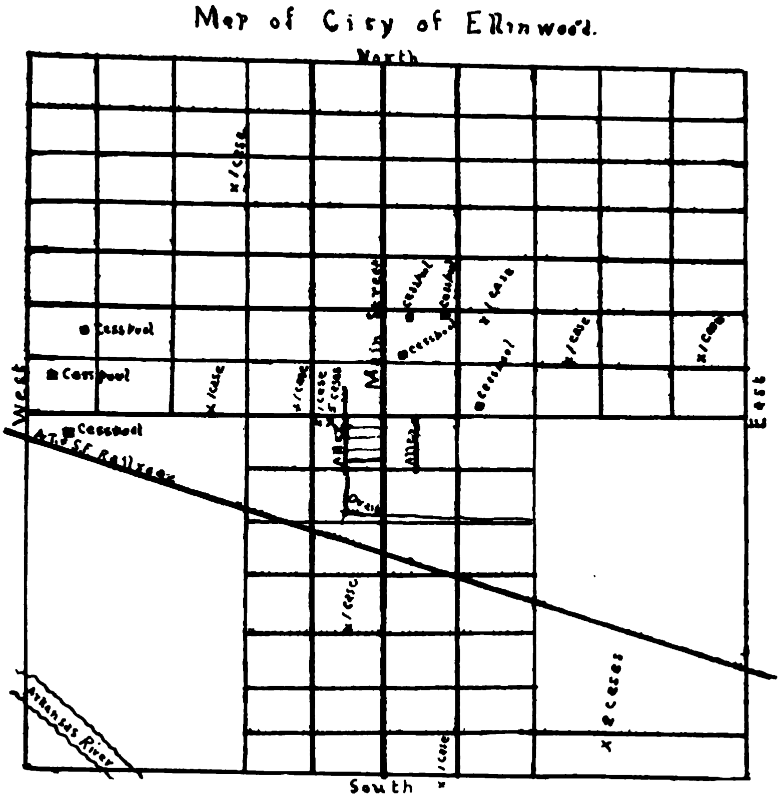
The prevalence of typhoid fever in the city of Ellinwood, Barton county, for the past year, was the occasion of a visit by the secretary to that place on May 6, in order to determine if possible the cause of the continuance of this disease. The condition of affairs had not been made known to this office until a few days previous to the visit, but when the history of the cases was related by a Great Bend physician it determined me to undertake to find out the cause of the disease.

One physician reports that he has had thirty-five cases during the past year, these cases being scattered at irregular intervals during this period of time, and other physicians report having a number of cases of continued fever, but were in doubt as to the real nature of the disease, one diagnosing it as malarial fever. However, the Weidal test, and the clinical history of a large number of cases, including intestinal hemorrhages in some, together with the analysis of the water, would seem to indicate this epidemic as being one of typhoid fever.

Upon arrival in this city we found a town of about 1000 inhabitants, scattered over an area of one-half square mile. The location is in the Arkansas valley, but a short distance from the Arkansas river, the surrounding country almost as level as a floor, thereby making the drainage very imperfect. The soil is composed of a sandy loam. The water-supply of the city is gotten from wells, in most instances driven into the soil twenty or twenty-five feet deep, where the first water layer is encountered, from which almost all of the residents of the city are supplied.

The absence of a sewerage system makes the disposal of sewage a matter of considerable concern, and I found, upon inspection, it was accomplished in two ways: First, the ordinary privy vault, most of them from four to six feet deep, and many of them without enclosures, and allowed to fill up before being removed to a new point; second, by the method of cesspools. The lay of the land dips from the west towards the east, and the underflow of water has been determined by the United States Geological Survey to flow from the west towards the east, in the same direction as the river.

A number of modern houses have constructed cesspools for the disposal of sewage. Each one of these cesspools was discovered to have been dug to this water-bearing stratum and the contents of the cesspool allowed to drain off through this sand and gravel. Three



of the cesspools are located immediately west of the principal point of infection, as will be noticed by the accompanying map.

Six samples of water taken from wells at points where the disease occurred were submitted to the bacteriologist for analysis, which analyses are reported in the following letter:

"MAY 15, 1906.

"*Dr. S. J. Crumbine, Topeka, Kan.:*

"DEAR DOCTOR—Following is the report of examination of samples of water sent by you:

"Cultures made from three drops of water taken from bottles marked John Dunker, Henry Bennett, and Mr. Boodie, and kept in incubator at 37° C. for thirty-six hours showed a profuse growth, which covered the entire surface of the Petri dish.

"Growth from samples marked A. H Shaeffer did not show so marked development of colonies, but a count could not be made, owing to the fact that the colonies ran together in places.

"Samples marked City drug-store well and V. S. Muscil showed about 3000 and 4000 per c. c., respectively.

"Bouillon cultures six days old made from all samples of water gave the indol test. Indol is an aromatic product, the result of the growth of certain bacteria. The *Bacillus coli-communis* is the principle indol-forming germ to be considered in water. The *Bacillus coli-communis* is closely related to the *Bacillus typhoses*. They develop under the same conditions, and where the one is the other is likely to be.

"There was a marked odor H_2S in the bouillon cultures, which were used in making the indol tests. H_2S is from peptones by the growth of the *Bacillus coli-communis*. The *Bacillus proteus vulgare*, which is found in water that has been contaminated with sewage, also gives the indol and H_2S tests; so it is safe to say that one and probably both of the germs, the *Bacillus coli-communis* and the *Bacillus proteus vulgare*, are in the specimens of water from Ellinwood. Evidence of contamination is sufficient to condemn the water. Very truly yours,

S. E. GREENFIELD, *Bacteriologist.*"

In several of the samples taken from driven wells it was found that there was an excavation around the piping which might allow surface contamination by water following down the pipe during the time of the rainy season. In other samples taken from wells the conditions above surface were all that could be desired, in that they were covered over and surface contamination quite impossible. The analyses of the water showed a uniform contamination of all the wells, and would seem to indicate the general undercurrent of water to be polluted, rather than such contamination coming from the surface.

The conclusions drawn, therefore, from the location of these cesspools, the location of the principal source of infection, the location of most of the cases of typhoid, would seem to indicate the necessity of the abandonment of all cesspools in this city immediately, filling them up with earth to above the water stratum; then, if desired to be used as cesspools, to require them to be cemented water-tight as a cistern, and be emptied as occasion required.

There can be doubt that many cases of typhoid fever in towns of this size having no sewerage system and a common water-supply are occasioned by the pollution of the water current from the cesspools. County health officers should demand the abandonment of all cesspools that empty themselves in a water-bearing stratum from which people in villages obtain their water supply.

The general prosperity over the state has shown itself in no greater manner than by the movement on the part of the people to make their homes modern, and this movement, requiring some disposal of sewage, in the absence of a sewer system, is one that should receive the careful attention and consideration of the health authorities.

It is suggested that these cesspools should be cemented water-tight, and that drainage therefrom might be had by four openings near the top, just below the frost line, through perforated tile drains running in various directions. Such a constructed cesspool would act somewhat in the capacity of a septic tank, liquefying a great deal of its contents by bacterial action, and supplying trees and growing vegetation with subirrigation. The top should be so constructed that the sludge could be pumped out when occasion required. Such a method would be free from contaminating the source of water-supply, and would still permit the construction of modern homes in towns too small to have sewerage systems.

VACCINATION versus SMALLPOX.

In a lecture delivered in Philadelphia by Doctor Schamburg recently, he stated that of more than 3000 smallpox patients treated at the Philadelphia Municipal Hospital during the past three years, not one had been recently successfully vaccinated. Of the 100 women employed in work near the patients four had refused to be vaccinated. These four were stricken with the disease, while the others who had submitted to the operation remained immune. Seven hundred medical students worked in the smallpox ward during these three years, and only one caught the infection, this one being a student who had never been successfully vaccinated, and none of the medical attendants were attacked, they having been successfully vaccinated.

It would seem as if such evidence ought to convince the most doubting as to the absolute protection of a recent vaccination against smallpox. Certainly such a combination of conditions could not occur without a reason, which reason must be apparent to any fair-minded person.

In the epidemic which has prevailed in Kansas for the past six years the evidence is equally convincing; hence the necessity of vaccination laws if we wish to effectually stamp out this disease. Quarantine measures are at best makeshifts. They can only be of value in that they prevent in a measure the spread of infection among the unvaccinated.

ARE SMALL QUANTITIES OF PRESERVATIVES PERMISSIBLE?

It is admitted by all who have examined the subject in a critical way, even by the users of preservatives, that in certain maximum quantities the limit of toleration is reached in each individual and positive injury is done. But it is also well recognized that many, if not all, of the usual foods, when used in large excess, produce injurious results. The many cases of disease produced by overeating, or by eating improperly prepared or poorly cooked foods, or by eating at unusual times, are illustrations of the fact. Upon this basis, and upon the further statement that when used in extremely small quantities the preservatives in question cannot be regarded as harmful, is founded the principal argument in favor of the use of preservatives, aside from the fact that the foods themselves are kept in a better and more wholesome state.

It is only proper to give to this argument full consideration and not to brush it aside as illogical and irrelevant. It is evident that any attempt to determine experimentally the effect of extremely minute quantities of any preservative, even when used continuously, would not be likely to lead to any definite result. In the foregoing data we have illustrations of the fact that even large quantities of the preservative employed—larger by far than would probably ever be found in any food product—do not always act in such a way as to permit of definite interpretation. The claim, therefore, that the use of such preservatives is justified when the amount is extremely small, and when even these small amounts are used only at intervals and not continuously, is worthy of careful consideration.

An illustration which is pertinent may be taken from the particular preservatives with which the foregoing experiments have been made, namely, boric acid and borax. One of the food products to which these preservatives are very commonly added is butter. This statement should not be taken to imply that in butter prepared for domestic use in this country borax is found to any considerable extent. When butter, however, is to be transported over long distances, and necessarily kept a long while, the addition of borax is frequently practiced.

The dietetic data which have been accumulated in the course of this experiment show that the quantity of butter consumed daily varies from thirty to seventy grams. Suppose, as a maximum, we say that the quantity of butter consumed in any one case daily is 100 grams, and that it contains one gram of boric acid or an amount of borax equivalent thereto. The maximum quantity of boric acid used in a day in this case would be one gram. In point of fact, however, it would rarely, if ever, reach this amount, but, even in those cases where butter is eaten freely, probably half a gram would be about the maximum quantity consumed. Further than this, one per cent. of boric acid, or its equivalent in borax, in butter is a very large quantity. Probably, as a rule, not more than one-half of one per cent. is employed. In this case the quantity of boric acid likely to be consumed by any one individual in a day would be reduced to one-quarter of a gram.

In the case of meats preserved by borax (although larger quantities are eaten than of butter), it is not likely that any larger quantities of borax would be consumed. Thus it appears that those who habitually eat butter and meat preserved with borax might be consuming a half a gram or a little more of boric acid per day. But preserved meats are not regularly eaten, and hence the quantity mentioned is likely to be overestimated. It would be unwise to affirm in a case of this kind, in the light of the data obtained by the experiments, that such a minimum consumption of borax, and especially when not a continuous one, would prove deleterious within any reasonable time of observation. The question then arises, Does the absence of such proof or the impracticability of obtaining it serve as a justifiable excuse for the use of this preservative?

This question ought not to be decided alone, because the principle of the decision must stand, not only for boric acid and borax, but for every preservative used in foods. In other words, whatever principle is established for judgment as to the use of boric acid in small portions must also be applied to the use of every other preservative used in foods. The principle must be still further extended so that whatever may be established as regards butter or meat must be admitted in respect of every other substance used in food. Hence, before admitting the full force of the argument based on minimal quantities, the full significance of such an admission must be considered, and the practically unlimited extent of its application acknowledged.

This leads to the discussion of the fact that in the majority of cases the labor of freeing the system from added preservatives falls principally upon the kidneys. In the method of life in vogue in this country the kidneys are already hard-worked organs. Americans probably eat more freely than the citizens of almost any other country, with the possible exception of England. Large quantities of nitrogenous foods are consumed. In the breaking down of the nitrogenous tissues the kidneys are the chief organs for the excretion of the debris. The addition of any further burden, therefore, no matter how minute, is to be deplored. If, however, the principle be admitted that injurious substances may be used in such small quantities as to be practically harmless, then we find the way open for loading upon the kidneys many different functions in addition to those which they now discharge. If they may be justly called upon to eliminate the small quantities of boric acid added in food, they cannot logically be freed from the necessity of eliminating also minute quantities of salicylic acid, saccharin, sulfurous acids and sulfites, together with the whole list of remaining preservatives, which are eliminated principally through the kidneys. It would be useless to contend that the occasional consumption of small quantities of boric acid in a sausage, in butter or in preserved meat would produce even upon delicate stomachs any continuing deleterious effect which could be detected by any of the means at our disposal, but naturally it seems that this admission does not in any way justify the indiscriminate use of this preservative in food products, implying, as it would, the equal right of all other preservatives of a like character to exist in food products without restriction.

It appears, therefore, that there is no convincing force in the argument for the use of small quantities, unless it can be established that there is only a single preservative used in foods; that this preservative is used only in a few foods; that it will be consumed in extremely minute quantities, and that the foods in which it is found are consumed at irregular intervals and in small quantities. On the other hand, the logical conclusion which seems to follow from the data at our disposal is that boric acid and equivalent amounts of borax in certain quantities should be restricted to those cases where the necessity therefor is clearly manifest, and where it is demonstrable that other methods of food preservation are not applicable, and that without the use of such a preservative the deleterious effects produced by the foods themselves, by reason of decomposition, would be far greater than could possibly come from the use of the preservative in minimum quantities. In these cases, it would also follow, apparently, as a matter of public information, and especially for the protection of the young, the sick, and the debilitated, that each article of food should be plainly labeled and branded in regard to the character and quantity of the preservative employed.

EFFECT OF BORIC ACID AND BORAX UPON GENERAL HEALTH.

The most interesting of the observations which were made during the progress of the experiments was in the study of the direct effect of boric acid and borax, when administered in food, upon the health and digestion. When boric acid, or its equivalent in borax, is taken into the food in small quantities, not exceeding half a gram (seven and one-half grains) a day, no notable effects are immediately produced. The medical symptoms of the cases in long-continued exhibitions of small doses, or in large doses extending over a shorter period, show in many instances a manifest tendency to diminish the appetite and to produce a feeling of fulness and uneasiness in the stomach, which in some cases results in nausea, with a general tendency to produce a sense of fulness in the head, which is often manifested as a dull and persistent headache. In addition to the uneasiness produced in the region of the stomach, there appear in some instances sharp and well-located pains, which, however, are not persistent. Although the depression in the weight of the body and some of the other symptoms produced persist in the after periods, there is a uniform tendency manifested after the withdrawal of the preservative toward the removal of the unpleasant sensations in the stomach and head above mentioned.

The administration of boric acid to the amount of four or five grams per day, or borax equivalent thereto, continued for some time, results in most cases in loss of appetite and inability to perform work of any kind. In many cases the person becomes ill and unfit for duty. Four grams per day may be regarded, then, as the limit of exhibition, beyond which the normal man may not go.

The administration of three grams per day produced the same symptoms in many cases, although it appeared that a majority of the men under observation were able to take three grams a day for a somewhat protracted period and still perform their duties. They commonly felt injurious effects from the dose, however, and it is certain that the normal man could not long continue to receive three grams per day.

In many cases the same results, though less marked, follow the administration of borax to the extent of two grams, and even of one gram, per day, although the illness following the administration of borax and boric acid in those proportions may be explained in some cases by other causes, chiefly grippe.

The administration of borax and boric acid to the extent of one-half gram per day yielded results markedly different from those obtained with larger quantities of the preservatives. This experiment—series V—conducted, as it was, for a period of fifty days, was a rather severe test, and it appeared that in some instances a somewhat unfavorable result attended its use. On the whole, the results show that one-half gram per day is too much for the normal man to receive regularly. On the other hand, it is evident that the normal man can receive one gram per day of boric acid, or of borax expressed in terms of boric acid, for a limited period of time without much danger of impairment of health.

It is, of course, not to be denied that both borax and boric acid are recognized as valuable remedies in medicines. There are certain diseases in which these remedies are regularly prescribed, both for internal and external use. The value which they possess in these cases does not seem to have any relation to their use in the healthy organism except when prescribed as prophylactics. The fact that any remedy is useful in disease does not appear to logically warrant its use at any other time.

It appears, therefore, that both boric acid and borax, when continuously administered in small doses for a long period, or when given in large quantities for a short period, create disturbances of appetite, of digestion, and of health.

H. W. WILEY, M. D.,
Chief of Bureau of Chemistry.

Approved: JAMES WILSON,
Secretary of Agriculture.

MAXIMS FOR PROLONGING ACTIVE AND USEFUL LIFE.

NOTE.—A maxim is useful because of its readiness of application. The mind has to reduce its conclusions to postulates before it can apply them to practice.

1. The commercial value of a life lies solely in its productive period; the other periods are a burden upon this.

2. This period should be prepared for from infancy, protected in adult life, and extend as long as possible into old age.

3. Constitutional vigor is created mainly by proper food and proper hygiene in youth.

4. No person over forty years of age should subsist mainly on animal foods, which are very good in early life. The reason for this is contained in maxim 14. The elasticity of some of the most important tissues in the body cannot be preserved by a person over

forty years of age who continuously loads up the body with the waste products of nitrogenous foods in excess, even if he had the best food in youth. Fruits and cereal foods should be largely and generally used by all persons over forty years of age.

5. Nerves are exceedingly important. They grow best in the country. Let youth be passed as much as possible away from the crowded centers of population.

6. Education may be misdirected, and may be overdone. A good machine may be ruined by making it too elaborate. A good knife may be rendered useless by sharpening it all away.

7. Regular, moderate, physical exercise is essential, and is generally neglected.

8. Do not make a burden of amusements. They may, and often are, made worse than overwork or undue worry.

9. Do not set an impossible ideal of life. It results in disappointment, and that ages.

10. Cultivate a serene mental attitude, and develop a capacity for deliberate enjoyment of whatever is at hand. The greatest pleasure often comes from little things easily and often overlooked.

11. Avoid every excess. Do not overwork, overplay, overeat, overdrink, or oversmoke, or allow yourself to become overinactive.

12. Do not assume obligations that you cannot discharge. This is the secret not only of much physical, but of much moral and mental disaster.

13. Study your diet, and your hours of labor, sleep, and relaxation, and conform to your constitutional requirements.

14. Take particular precaution to preserve by daily actions the elasticity of all the tissues.

15. Maintain self-respect, avoid sordidness and gloom, and "grow old gracefully."

16. It is desirable to diversify your interests. Have one or two restful diversions, using a portion of your time away from your regular occupation and habitation.—*Teachers' Sanitary Bulletin.*

Flies!
House-flies!
Disease-bearing flies!
Screen your house and remove the
Manure pile, which is the pest's breeding-place.

TANNIN IN COFFEE.

By C. D. Howard, in New Hampshire Bulletin.

The fruit of the coffee tree (*Coffea arabica*) consists of a dark-reddish berry, composed structurally of the two seeds or "beans" placed face to face, and a series of three enveloping membranes. By special treatment the two outer membranes, known as the shell or "husk" and the "parchment," are easily removed, and the berry, as it is received by the coffee-roasters, consists of the two beans, each enveloped by the inner covering or "skin."

Chemically, raw coffee consists of cellulose, gum, dextrin, saccharin matter, proteids, the alkaloid caffein, and an astringent principle known as caffetannic acid. The principal effect of roastting, aside from converting much of the sugar into caramel, is in the transformation of some of the fatty material into a fragrant oil known as caffeol, the latter being the chief aromatic principle of coffee.

The physiological effects of coffee are principally due to the caffein and the caffetannic acid. While the action of caffein as a general stimulant and as a diminisher of fatigue is well understood, there is some reason for believing that the ill effects attendant upon the excessive use of coffee, such as the derangement of the digestive processes, constipation, and general debility, are attributable, in a very large measure at least, to the caffetannic acid. Certain it is, the alkaloid caffein does not possess all the therapeutic or toxic properties of coffee.

Contrary to the popular notion, the tannin of coffee, while astringent in nature, unlike the tannin of tea, does not precipitate gelatin solution and will not, therefore, "tan." Chemically, these two forms of tannin differ very materially, tea tannin being considered as existing mainly as ordinary oak tannin (quercitannic acid), while that of coffee is regarded as a double caffetannate of potash and caffeine. Moreover, while the tannin of tea probably has but little influence upon its normal flavor, and could well be dispensed with, caffetannic acid, on the other hand, is an essential constituent of coffee, and could not be eliminated without seriously impairing the flavor of this decoction.

Based upon the popular view that coffee is injurious, a host of cereal substitutes now find extensive sale. Although in many cases the most extravagant claims are made for the nutritive virtues of these preparations, yet the fact remains that not a few of them are but waste products occurring in the manufacture of other foods. Examination of one of the most extensively advertised of these substitutes shows that it is substantially nothing more than the roasted bran or hulls of wheat.

Realizing that a large proportion of the present consumers of cereal drinks would gladly return to the use of coffee could they be assured of an article from which the injurious constituents had been removed, several coffee-roasters have placed upon the market brands for which varying claims have been made concerning the elimination of tannic acid. The analyses of three such brands follow:

No. 2607. "Detanated India Coffee," prepared by Clark, Coggin & Johnson Company, Boston, has, according to the manufacturers, "the advantage of having had removed from it all the injurious elements that make coffee a menace to health to certain people." "Tannin also is a poison to many people; this completely removed, as has been the case in 'Detanated India Coffee,' does away with the injurious effects usually produced to many people when coffee has been used."

No. 2608. "Barrington Hall Steel Cut Coffee," prepared by Baker & Co., Minneapolis, Minn., bases its principal claim for favor upon other merits. The manufacturers do, however, make the statement that "the chaff, ordinarily ground up with coffee, contains only the astringent principle (tannin), and not only injures the fine flavor of the coffee, but is the basis for the objection that some people have for using coffee. Remove it from 'Barrington Hall,' and it leaves only the rich flavor of the pure coffee, which can be used by the most delicate. Can be used without ill effect by those who find that ordinary coffee injures them, because the yellow tannin-bearing skin and dust (the only injurious properties of coffee), are removed by the steel-cut process."

No. 2613. "Digesto Coffee," prepared by Digesto Coffee Company, Greenwich street, New York, "contains no caffein or tannic acid." The manufacturers claim it to be "the highest grade of coffee, with the caffein and tannic acid eliminated by our own process." "No more headaches, no more nervous dyspepsia, no more sleepless nights," etc.

A comparison of the analyses of these products with that of an ordinary Java and Mocha blend, and also with one of the "harmful" chaff or skin, shows the fallacy of these claims with regard to the removal of tannin. (See table at top of next page.)

	"Barrington Hall."	"Detanated."	"Digesto."	Java and Mocha.	Coffee chaff.
Moisture..........	2.70%	2.70%	2.26%	3.13%	2.60%
Ash..............	4.10	4.05	3.61	4.13	5.65
Fat..............	13.18	14.12	12.55	14.10	9.30
Caffeine...........	1.17	1.33	.87	1.29	.40
Fiber.............	18.46	15.70	22.70	15.50	26.50
Caffetannic acid...	10.76	11.04	7.61	11.17	5.98

In two of these cases the manufacturers base their claims for the "complete removal of tannic acid" upon the elimination, during the process of grinding, of the chaff or skin occurring on the surface, and, to some extent, enmeshed in the groove of the coffee-bean. That such removal of the chaff cannot possibly have any appreciable effect on the tannin content of the product is evident from the composition of this material, as shown above. The only practicable method by which the caffetannic acid could be extracted is that of treatment with hot water, and this process would involve the simultaneous removal of the caffeine. In consequence, while the claims made for "Digesto Coffee" are more logical than in the case of the other two brands, yet it is evident in this instance that a complete extraction of these constituents could not have been effected otherwise the resulting product would be but little different from the residual "grounds" from coffee-making.

ALCOHOLIC NOSTRUMS.

Some time ago the daily press contained the information that the United States Department of Internal Revenue had ordered that certain alcoholic nostrums should bear a revenue tax after April 1, 1906, and that all those engaged in the sale of such articles should pay the license of a retail-liquor dealer. Acting on the theory that the State Board of Health has supervision over the general health of the citizens of this state, it would seem to come within the province of this department to determine whether or not such articles were excluded from sale in this state under the prohibition law; therefore the following letter was addressed to the attorney-general:

"TOPEKA, April 14, 1906.

"*C. C. Coleman, Attorney-general, Topeka, Kan.:*

"DEAR SIR—You will notice by the enclosed letter from the collector of internal revenue, and circular No. 673 of the Treasury Department, that certain so-called patent medicines have been adjudged by said department to contain sufficient quantity of alcoholic spirits combined with the minimum amount of drugs or medicines as to come under the provisions of the federal statutes requiring a tax for their manufacture and sale, and that after April 1, 1906, such so-called patent medicines are required to have a special tax affixed on each bottle, and the dealer selling same be required to have a United States license for retail liquor-dealers.

"Under such construction, it would seem to me that, under the prohibition laws of the state of Kansas, such patent medicines, a list of which I herewith enclose, as furnished me by the Department of Internal Revenue, would be debarred from sale in this state, in the same way and manner in which other intoxicating liquors are sold, namely, by druggists having a permit to sell liquors for medical, mechanical and scientific purposes, and then only by the usual form of affidavit.

"In addition to the ruling of the department on this question, I desire particularly to call your attention to section 2460 of the Revised Statutes of 1901, defining what intoxicating liquors are, within the meaning of the Kansas law. I desire an opinion from your department as to whether or not such medicines are debarred from sale in the state of Kansas, excepting in the way and manner above indicated. Very truly yours,

S. J. CRUMBINE, *Secretary.*"

To which the following reply was received:

"TOPEKA, April 14, 1906.

"*S. J. Crumbine, Secretary State Board of Health:*

"DEAR SIR—I am in receipt of your letter of April 14, and of the letter of United States Revenue Collector Simpson and the treasury circular enclosed therein.

"From the collector's letter and the treasury circular, it appears that the United States Revenue Department, having determined to its own satisfaction that certain drugs and proprietary medicines are intoxicating, has issued a departmental ruling that the vendors of such drugs and medicines must obtain a license to sell the same, as provided in cases of other and more commonly known intoxicants.

"You ask, in substance, if such drugs and medicines as are classed as intoxicating by the United States Revenue Department are barred from sale in this state, except by persons holding permits issued by the probate courts of Kansas.

"This matter has heretofore been presented to me and has already had my careful consideration. The ruling of the United States Revenue Department has little practical significance and is of no avail whatever in a Kansas court of law. The United States government is only concerned in the sale of liquors in Kansas and elsewhere—outside of the territories—from the standpoint of revenue. The other great duties of dealing with the moral, or immoral side of the liquor business and the police power over the traffic are left to each state. The state may permit, regulate or forbid the sale of intoxicating liquors. The national government merely says: 'If you sell, pay me.'

"If one is accused of selling liquor in violation of the laws of

Kansas, it would be no defense for him to say that the particular kind of liquor which he sold was not classified by the United States Revenue Department as an intoxicating liquor for which a United States government license fee was exacted. If the liquor be intoxicating, it is an offense against the Kansas law to sell it, although it may be classed as a non-intoxicant in Missouri, Maine, or Ohio, or by the United States Revenue Department, and the seller will find himself incarcerated in a Kansas jail for breaking a Kansas law.

"So, too, a United States revenue regulation, no matter how wise or accurate, that a certain drug or medicine shall be classed as an intoxicant, is of no consequence in Kansas in the administration of Kansas law. At the very most, it could only suggest itself to a county attorney in Kansas that, as the United States Revenue Department had found it to be intoxicating, the chances would be good that in a prosecution brought by him he could confront the accused with one or two expert chemists, whose testimony would be that the particular drug sold was intoxicating and that they knew its alcoholic elements from careful chemical analysis.

"Doubtless the Kansas legislature could pass a law providing that drugs classed as intoxicating by the United States Revenue Department could only be sold by a druggist holding a permit from the probate court. But the legislature will probably not do so, as it has already covered the subject in a more sweeping and effective way. As the law stands, any liquor which will produce intoxication is under the ban of our law, and the supreme court has siad:

"'Whether any particular compound or preparation of this class (peach cider, etc.) is, then, within or without the statute, is a question of fact, to be established by the testimony and determined by a jury.' (See *Topeka v. Zufall*, 40 Kan. 50).

"This, it appears to me, disposes of your question entirely.

Very truly yours, C. C. Coleman, *Attorney-general.*"

The Department of Revenue furnished this office with the following list of patent medicines which come within the tax requirements: Atwood's La Grippe Specific, Cuban Gingeric, DeWitt's Stomach Bitters, Doctor Bouvier's Buchu Gin, Doctor Fowler's Meat and Malt, Duffy's Malt Whisky, Gilbert's Rejuvenating Iron and Herb Tonic, Hostetter's Bitters, Kudros, Peruna, Rockandy Cough Cure.

It is fair to add, however, that the department had been advised by the Peruna Company that they were now putting up their medicine to conform with the internal-revenue requirements; that is, to be sold without a tax. It would seem that with such a radical change in the composition of this noted nostrum it would also be necessary for them to revise their testimonials, as it is admitted that the medicine is entirely different as put up by that company now from what it was formerly. County health officers should see that these medicines are not sold except in compliance with the opinion laid down by the attorney-general, and which should receive the hearty support of all good citizens.

ANTITUBERCULOSIS VACCINE.

For more than four years Professor von Behring has been able to produce an artificial immunity to tuberculosis in cattle which has satisfied the most rigid clinical and experimental tests, and he has perfected a technique which is indorsed by scientific veterinarians and has been employed with success as a practical measure by numerous large stock-raisers and proprietors of dairy herds in southern Germany, Hungary, and Bohemia. In the grand duchy of Hesse the method has received the official recognition and recommendation of the state. The inoculation material consists of dried tubercle bacilli in a sterile emulsion, which is injected into the circulation through the jugular vein. In the preparation of the emulsion the bacilli are carefully triturated to avoid the entrance of coarse particles into the blood current. Before using, the inoculation fluid is slightly warmed, to approximate the temperature of the blood. The treatment is completed in two injections separated by an interval of twelve weeks. In the first injection one unit (0.004 gram of dried bacilli) is used; in the second, the dose is increased to five units (0.02 gram). Cattle can be treated with both injections at a cost per head of but a mark and a half (thirty-six cents), and the material, as prepared under the direction of Professor von Behring, may now be obtained at this price. The most suitable age for the first preventive inoculation is from three weeks to three months. The operation is practically devoid of danger, and the calves so treated show no later ill effects from the injections. It has now been absolutely proved, in thousands of cases, that these calves do not become tuberculous when intimately associated in infected stables with other cattle with open tuberculous lesions, that they cannot be experimentally inoculated with tuberculosis, and that they do not in later years respond to the tuberculin test. It would seem that these criteria should convince the most skeptical of the immense scientific and economic value of von Behring's methods in overcoming tuberculosis in cattle.

The obvious corollary of the success attained in immunizing calves is that the same principle, applied, perhaps with modifications, to infants for the same purpose, offers a reasonable expectation of securing immunity from tuberculosis also for human beings, and von Behring does not hesitate to make this logical application of his method. He has practically declared that if the profession and public were ready to accept the inoculation treatment the tuberculosis question for future generations would be solved, for, with the aforesaid measures now at hand, prevention can be attained. There are, however, practical difficulties in applying to human infants an experimental method, even if uniformly satisfactory in its results, which has been tested only upon animals, and the proposition to inoculate healthy babies with a preparation of tubercle bacilli has aroused prejudice and opposition in influential quarters which will require education and experience with the new method to overcome—just as was the case in the early history of vaccination for smallpox and in the beginning of the antitoxin treatment for diphtheria.—*Doctor Shively, in New York Medical Journal.*

METHODS OF THE CHENEY MEDICINE COMPANY.

Doctors Brown and Lenox, Rogers, Ark., send us an account of a case of catarrh which was not cured by Hall's Catarrh Cure. The patient, Mr. Robert Parks, consulted these physicians for catarrh, and stated that he had just finished his twenty-sixth bottle of Hall's Catarrh Cure, but that instead of being benefited he was worse. Mr. Parks wrote to the Cheney Medicine Company, the makers of Hall's Catarrh Cure, giving his experience, and asking the firm to pay $100 in accordance with the advertisements: "$100 for any case of catarrh which it will not cure," or to refund the money he had paid. The following is a copy of a letter which he received in reply:

"TOLEDO, OHIO, March 30, 1906.

"*Robert Parks, Rogers, Ark.:*

"DEAR SIR—Yours of recent date received, and in reply will say, as we have already said, that many cases require much more than you have taken for a cure, and as this is the case, and Hall's Catarrh Cure is not placed on the market on the 'no cure, no pay' plan, we would not feel at all justified in refunding the money paid for this trial of the medicine. Will further say that you have failed to state much regarding your disease, symptoms of same, of how long standing, symptoms of the action of the medicine, etc. Had we more information concerning your case, we might have been able to make some helpful suggestions regarding the treatment.

(A. G. A.) Yours very truly, F. J. CHENEY & Co."

The above is a sample of the shrewdness and unscrupulousness of nostrum vendors. Their brazen offers of reward are fortified by conditions impossible to fulfil. Of course, a patient should not expect to get results from simply twenty-six bottles. He should keep on until old age carries him off, or he must be very sure to inform the company of his slighest symptoms or he will fail to reap the benefits of their valuable remedy. It will be remembered that Mr. Cheney is the author of the "red clause." He is the man who bragged to his fellows at the last meeting of the American Proprietary Association, of which he was president, of having a lobbyist in the different state legislatures, so as to be ready in case any untoward legislation should be introduced. He is too shrewd a business man to risk having to pay $100 to every individual with catarrh who tries his nostrum without being cured.—*Journal of the American Medical Association.*

HEALTH THOUGHTS.

Isn't it queer that some people care more for what they eat than for how they feel? The degree of health produced by a certain amount of food measures its value to some, but the majority ask how it tastes. The question is not how much good is this food going to do me, but how pleasant it will taste for an instant while it is passing through my mouth.

Another strange thing is that, although people know that rebreathed air is an active poison, many have a horror of pure air in their homes, and especially in their bedrooms.

It is strange, too, that when a physician, in an entirely disinterested way, tells a woman that, in order to use all the lung tissue God has given her, she must make certain changes in her mode of dress, in nine cases out of ten she will listen to the advice of the dressmaker instead.

It is also queer that while all persons have a horror of disease, they are so long in finding out that the only sure way of avoiding disease is by keeping every organ in the body perfectly well. While we are all so deadly afraid of germs, microbes, bacteria, etc., we live in such a way that our bodies become deficient in resisting power to these same germs, and when they are present we expect in some miraculous manner to have them expelled.

It is queer that we so enjoy talking about disease, plasters, and poultices, and are so apt to forget the contagion of health, and that health and cheerfulness beget each other.

While we want so much to enjoy life, with all its comforts, pleasures, and happiness, we are so apt to forget that upon health these all depend, and that "Health is the vital principle of bliss, and exercise of health."—*Syracuse Clinic.*

LAY RESOLUTIONS INDORSING THE NOSTRUM CAMPAIGN.

We have long been convinced that the attitude of the religious press of this country, as a whole, in publishing the advertisements of patent-medicine nostrums, especially of the alcoholic class, has been inconsistent and diametrically opposed to the very things for which they stand; namely, honesty and decency in business and commercial affairs, with temperance, and a consistent practice of the doctrines which they teach in every-day life. It is refreshing, indeed, to discover that at last a certain religious body has called a halt to this vicious practice of nostrum advertising. The following, taken from the *Journal of the American Medical Association*, should receive the hearty indorsement of other religious bodies, if the religious press hopes to retain the high ethical standing they are supposed to occupy:

"LEBANON, Ohio, April 12, 1906.

"*To the Editor:* I enclose a copy of a memorial to the next general assembly of the Cumberland Presbyterian church on the subject of medical advertisements, adopted by the Miami presbytery at its meeting in Lebanon, April 4, 1906. So far as I know, this is the first instance of any religious body taking such action. It is to be hoped that many will follow the example. The work of the *Journal* on the nostrum question is heartily approved by all reputable physicians in Warren county. B. H. BLAIR, M. D.

"WHEREAS, There appear in the columns of our church paper and other periodicals medical advertisements which are objectionable because of their misleading, deceptive, untrue and fraudulent character; and

"WHEREAS, The publication of such advertisements tends to suggest the presence of disease which does not exist, to cause a postponement of early diagnosis and appropriate treatment of many serious maladies, and to injure the physical, mental and moral well-being of many readers who implicitly rely on what they have read in their church paper; and

"WHEREAS, Our official church organ, by its course in admitting such advertisements, is subjecting itself to ridicule, while other periodicals of recognized standing are refusing all medical advertisements; and

"WHEREAS, Many of the popular nostrums advertised contain alcohol, opium, chloral or cocaine or other drugs in quantities, the indiscriminate use of which tends to produce drug fiends and inebriates, and thereby to defeat the cause of temperance as presented and advocated by the same paper; and

"WHEREAS, Reputable Christian physicians of unquestioned professional standing and eminent qualifications, on whose judgment we must rely on questions of medical character, and whose labor and influence are exerted for the moral and physical betterment of humanity, it is to be observed, are a unit in condemnation of such advertisements; and

"WHEREAS, The injuries wrought and evils perpetrated by the practice of charlatans and quacks are recognized only in their fullest by physicians and in part by intelligent laymen; and

"WHEREAS, No amount of money received from such advertisements can right these wrongs; and

"WHEREAS, We affirm our affection for the *Cumberland Presbyterian* and express our confidence in its management and editorial control, and observe with pride its attainment: therefore, be it

"1. *Resolved,* That the general assembly direct its board of publication, through its agents, to refuse all advertisements of a medical character, unless said advertisements are first approved by the board to be hereinafter named; and

"2. *Resolved,* That this special board be composed of three physicians, selected by the board of publication for their known high professional standing, eminent qualifications, ripe experience, and unquestioned integrity."

BULLETIN
OF THE
Kansas State Board of Health.

Published Monthly at the Office of the Secretary of the Board, Topeka, Kan.

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J. B. CARVER, M. D., President, Fort Scott.

B. J. ALEXANDER, M. D., - Hiawatha.
E. P. MILLS, M. D., - - - - Olathe.
G. E. LOCKE, M. D., - - - Holton.
L. A. GOLDEN, M. D., - - - Kensington.
A. B. SCOTT, M. D., - - - - Jetmore.
J. B. CARLILE, M. D., - - - Leon.
H. M. BENTLEY, M. D., - - Sterling.
C. H. LERRIGO, M. D., - - Topeka.
C. D. WELCH, Attorney, Coffeyville.

S. J. CRUMBINE, M. D., Secretary.

F. O. MARVIN, A. M., Mem. Am. Soc. C. E.,
Sanitary Adviser and Civil Engineer, Lawrence.
E. H. S. BAILEY, Ph. D., Chemist, Lawrence.
SARA E. GREENFIELD, M. D., Bacteriologist, Topeka.
W. J. V. DEACON, Statistician, Topeka.

No. 6. JUNE, 1906. VOL. 2.

This Bulletin contains the third article on food analyses, and, in many respects, is the most important and interesting, from an educational standpoint, of any that has thus far been issued. Health officers should read and reread the entire contents of these reports, in order to familiarize themselves, not only as to the analyses of the food products mentioned, but also with the custom of manufacturers and the trade in general. Such knowledge is essential if boards of health are intelligently to pass upon these analyses and be competent to cause to be printed in the official county papers those things that are contemplated by the law.

"The year 's at the spring,
And day 's at the morn!
The lark 's on the wing,
The snail 's on the thorn!
God 's in His heaven—
All 's right with the world!"

— *Browning.*

"He that observeth the wind shall not sow," and he that taketh counsel of every friend will not act. Think—decide—abide—and thou shalt prosper.

VITAL STATISTICS

Reported to the Kansas Board of Health for May, 1906.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever		Smallpox.		Measles.	
	Cases. . .	Deaths. . .	Cases. . .	Deaths. . .	Cases. . .	Deaths. . .	Cases. . .	Deaths. . .	Cases. . .	Deaths. . .	Cases. . . .	Deaths. . .
Allen	1	1	0	0	0	0	0	0	19	1	1	0
*Anderson												
Atchison	5	5	0	0	0	0	0	0	7	0	0	0
†Barber												
Barton	0	0	0	0	0	0	6	1	1	0	0	0
Bourbon	2	2	0	0	0	0	0	0	7	0	0	0
†Brown												
*Butler												
Chase	1	1	0	0	0	0	0	0	0	0	1	0
Chautauqua	0	0	0	0	1	0	0	0	2	0	0	0
Cherokee	1	1	0	0	1	1	0	0	3	0	1	1
Cheyenne	0	0	0	0	0	0	1	0	0	0	10	1
Clark	0	0	0	0	0	0	4	0	0	0	0	0
†Clay												
Cloud	1	1	0	0	0	0	0	0	0	0	1	0
Coffey	3	2	1	0	0	0	0	0	0	0	0	0
†Comanche												
Cowley	0	0	0	0	0	0	0	0	14	0	2	0
Crawford	0	0	0	0	1	0	0	0	0	0	4	0
†Decatur												
Dickinson	0	0	1	0	0	0	2	0	0	0	0	0
Doniphan	0	0	0	0	0	0	0	0	2	0	0	0
Douglas	4	4	0	0	1	1	0	0	1	0	0	0
Edwards	0	0	0	0	0	0	9	0	0	0	0	0
Elk	1	1	0	0	0	0	0	0	0	0	7	0
†Ellis												
*Ellsworth												
Finney	3	0	0	0	0	0	0	0	0	0	0	0
Ford	0	0	0	0	0	0	0	0	13	0	0	0
Franklin	0	0	0	0	2	2	1	0	0	0	0	0
*Geary												
†Gove												
†Graham												
‡Grant												
*Gray												
‡Greeley												
Greenwood	1	1	1	0	0	0	0	0	0	0	5	0
Hamilton	0	0	1	0	0	0	0	0	0	0	0	0
Harper	0	0	0	0	0	0	3	0	2	0	2	0
Harvey	2	2	0	0	0	0	2	0	0	0	0	0
†Haskell												
†Hodgeman												
Jackson	1	1	1	0	0	0	3	0	1	0	0	0
Jefferson	0	0	0	0	1	1	0	0	0	0	0	0
Jewell	0	0	0	0	0	0	0	0	2	0	0	0
†Johnson												
*Kearny												
Kingman	0	0	0	0	1	1	0	0	0	0	0	0
†Kiowa												
Labette	0	0	0	0	0	0	2	0	0	0	2	0
Lane												

CONTAGIOUS AND INFECTIOUS DISEASES – Concluded.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.	
	Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...	Cases. .	Deaths...
Leavenworth	0	0	0	0	0	0	0	0	2	0	0	0
†Lincoln												
Linn.............	2	2	0	0	0	0	0	0	0	0	0	0
Logan...........	0	0	1	1	0	0	0	0	0	0	0	0
†Lyon												
†Marion.												
Marshall.	0	0	0	0	0	0	3	0	0	0	0	0
McPherson.......	0	0	0	0	0	0	6	0	0	0	0	0
†Meade..........												
Miami..	2	2	0	0	0	0	0	0	0	0	0	0
†Mitchell....... ..												
Montgomery	1	1	3	2	0	0	0	0	28	0	1	0
Morris...........	0	0	4	0	0	0	0	0	0	0	0	0
Morton...........	1	0	0	0	0	0	0	0	0	0	0	0
Nemaha	2	2	0	0	1	0	0	0	0	0	4	0
Neosho..........	1	1	0	0	0	0	0	0	0	0	0	0
†Ness..............												
Norton...........	0	0	2	0	0	0	0	0	0	0	0	0
Osage	1	1	0	0	0	0	0	0	0	0	0	0
Osborne..........	6	0	0	0	0	0	2	0	0	0	0	0
Ottawa	0	0	0	0	0	0	2	0	45	0	0	0
Pawnee...........	1	1	0	0	0	0	0	0	0	0	0	0
Phillips	0	0	1	0	0	0	1	0	0	0	0	0
†Pottawatomie ...												
Pratt............	0	0	0	0	0	0	0	0	6	0	10	0
Rawlins..........	0	0	0	0	0	0	0	0	0	0	47	0
Republic...	0	0	0	0	0	0	4	0	4	0	0	0
Reno	0	0	0	0	0	0	0	0	9	0	0	0
*Rice.............												
*Riley............												
†Rooks												
Rush	3	0	0	0	0	0	0	0	6	0	0	0
Russell.	0	0	0	0	0	0	1	0	0	0	0	0
†Saline...........												
Scott..	0	0	0	0	0	0	1	0	0	0	0	0
Sedgwick	5	3	0	0	1	0	2	1	46	0	43	0
†Seward												
Shawnee	0	0	0	0	3	0	4	0	1	0	0	0
Sheridan.........	0	0	0	0	0	0	6	0	0	0	0	0
†Sherman.........												
*Smith												
*Stafford..........												
‡Stanton												
†Stevens												
Sumner...........	2	2	1	0	2	0	2	0	8	0	0	0
*Thomas												
Trego	1	0	0	0	0	0	0	0	0	0	0	0
Wabaunsee......	0	0	0	0	3	0	1	0	0	0	0	0
†Wallace												
Washington......	1	0	1	0	0	0	0	0	0	0	0	0
Wichita..........	1	0	0	0	0	0	0	0	0	0	0	0
Wilson...........	1	1	1	0	0	0	0	0	16	0	0	0
†Woodson.........												
Wyandotte......	0	0	0	0	1	0	0	0	1	0	0	0
Cities:												
Atchison												
Kansas City....	30	14	40	2	7	1	0	0	3	0	10	0
Leavenworth ..	3	3	0	0	6	1	3	0	1	0	0	0
Topeka	0	0	1	1	2	0	3	0	1	0	2	0
Wichita........												
State Institutions,	7	0	0	0	0	0	0	0	0	0	1	0
Totals.....	97	55	60	6	34	8	65	2	251	1	154	2

* No report. † No contagious diseases in May. ‡ No health officer.

ANNUAL CONFERENCE OF COUNTY AND MUNICIPAL HEALTH OFFICERS WITH THE STATE BOARD OF HEALTH.

On June 21 and 22 was held the third annual conference of county and municipal health officers with the State Board of Health. The first day was devoted entirely to the sessions of the State Board of Health. On June 22 the regular session with representatives of local boards of health was held in the state house. Following is the program:

JUNE 21. 10 A. M. Session State Board of Health.
2 P. M. Session State Board of Health.
7 P. M. Annual Banquet.

JUNE 22. First session, 10 A. M.

Address of welcome, by Mr. T. A. McNeal.

Response, by J. B. Carver, president State Board of Health.

"Relation of the Public to Boards of Health."—Dr. Preston Sterrett, member city board of health, Kansas City.

Discussion.—Dr. Charles S. Huffman, county health officer, Cherokee county, Columbus.

"The Pure Food Problem."—Dr. S. J. Crumbine, secretary State Board of Health, Topeka.

Discussion.—Dr. E. P. Mills, member State Board of Health, Olathe, and Dr. L. A. Golden, member State Board of Health, Kensington.

Question box.

JUNE 22. Second session, 2 P. M.

"Examination of School Children."—Dr. H. L. Alkire, professor of anatomy, Kansas Medical College, Topeka.

Discussion.—Dr. Henry O'Donnell, county health officer, Ellsworth county, Ellsworth.

"Disinfection Following Puerperal Fever."—Dr. A. B. Scott, county health officer, Hodgeman county, and member State Board of Health, Jetmore.

Discussion.—Dr. Sherman L. Axford, county health officer, Greenwood county, Virgil.

"Sanitary Organization."—Dr. J. W. Graybill, county health officer, Harvey county, Newton.

Discussion.—Dr. R. Aikman, county health officer, Bourbon county, Fort Scott.

"Infection and Immunity in Disease."—T. R. Conklin, M. D., county health officer, Dickinson county, Abilene.

Discussion.—Dr. L. R. King, county health officer, Geary county, Junction City.

"Car Sanitation."—Dr. H. W. Wright, county health officer, Franklin county, Ottawa.

Discussion.—Dr. W. I. McFarland, county health officer, Republic county, Belleville.

"Typhoid Fever and the Local Board of Health."—Dr. W. L. Carlyle, county health officer, Nemaha county, Sabetha.

Discussion.—Dr. J. F. Wallace, city health officer, Leavenworth.

"Adulteration of Drugs."—Prof. L. E. Sayre, dean school of pharmacy, University of Kansas, Lawrence.

Discussion.—Dr. R. H. Miles, county health officer, Osage county, Lyndon.

Miscellaneous.

It is to be regretted that a number of the doctors who were expected to take part on the program were not present, but all together a pleasant and profitable session was held. The question box called out many matters of practical importance to county and municipal health officers and is a feature that should be continued each year. Health officers who were not present at this meeting are distinctly the losers thereby.

The Monthly Bulletin of the California State Board of Health says: "The commissioner of health of Chicago recently ordered that all cases of tuberculosis be reported, not with any intention to quarantine, or in any way to interfere with treatment, but for the purposes of preventing the spread of it through knowledge of location of all cases. In Kansas the State Board of Health has ordered that all county health officers require the disinfection of every house in which a death occurs from tuberculosis. In California tuberculosis is a reportable disease, and every case *should* be promptly reported No harm could possibly result, but much good, if every center of infection was known to health officers, and the sooner we follow the example of Kansas the better."

The Fly and the Tubercle Bacillus.

"The recent stress which has been laid on alimentary infection in tuberculosis should lead to a more careful consideration of the means by which tubercle bacilli may reach the alimentary canal. The recent studies of Lord show that the ubiquitous fly may play an important part in alimentary transmission. The bacilli not only pass the alimentary canal of the fly unchanged, but undergo a marked proliferation there. Fly-specks may contain as many as 5000 bacilli, and, according to Lord's computations, thirty infected flies may deposit within three days from 6,000,000 to 10,000,000 tubercle bacilli. The danger does not seem to be from the liberation of bacilli in the air, but from the deposition of the fly-specks on food. That this can and does occur under certain circumstances was abundantly demonstrated by our experience with typhoid fever during the Spanish-American war. We should bear in mind the possibility of infection by the fly, and be much more strict than we are at present in the disposition of sputum and in the protection of foodstuffs, and this refers particularly to the summer months."
—*Journal American Medical Association.*

ANALYSES OF FOOD PRODUCTS.

No. III.

LAWRENCE, KAN., June 15, 1906.

Dr. S. J. Crumbine, Secretary State Board of Health, Topeka:

DEAR DOCTOR—I herewith present a report on recent work in food analysis.

BAKING-POWDERS.

The work on baking-powder has been continued, and several other brands have been examined. As stated in a previous Bulletin, the value of a powder depends very much on its age. It is for the interest of the manufacturer as well as the consumer that the grocer should handle so small a stock that he can dispose of it quickly before it deteriorates in value.

The following brands were examined:

No. 2624. Goldman's Baking Powder, F. A. Goldman, Oskaloosa, Kan. Sample appeared to be nearly new. This is an alum baking-powder. Available carbon dioxid, 4.99 per cent.

No. 2625. Snowflake Baking Powder, put up for J. K. Hamilton & Co., Oskaloosa, Kan. A new sample. This is an alum powder. Available carbon dioxid, 11.05 per cent.

No. 2626. Three Meal Baking Powder, Ridenour-Baker Grocery Company, Kansas City, Mo. This was not a new sample. An alum powder. Available carbon dioxid, 3.6 per cent.

No. 2629. Lee Baking Powder, Salina, Kan. A new sample. This is an alum phosphate powder. Available carbon dioxid, 8.67 per cent.

FLAVORING EXTRACTS.

EXTRACT OF LEMON —As stated in a previous Bulletin, many of the extracts on the market contain an extremely small quantity of oil of lemon (much less than one per cent.), and a correspondingly small quantity of alcohol is required to hold the oil of lemon in solution. A convenient test by which the consumer may get some idea of the quality of a sample of extract of lemon is to add to a teaspoonful of it in a tumbler about three times as much water. If the liquid becomes turbid on account of the separation of the oil of lemon, the sample contains a fair amount of this oil, but if it does not become cloudy on the addition of water, the extract is of a very poor grade.

No. 2557. Primrose Flavoring Extract, manufactured by the

Parkhurst-Davis Mercantile Company, Topeka, Kan. Bought at Jetmore, Kan. The sample contains 31.9 per cent. of alcohol, with an amount of oil of lemon so small that it cannot be measured. It is colored to imitate the genuine extract.

No. 2558. "Our Boss" Extract of Lemon, manufactured by Alwood & Steel Company, Chicago. Bought at Jetmore, Kan. This sample contains 35.8 per cent. of alcohol. The amount of oil of lemon is very small; certainly not over $\frac{2}{10}$ of one per cent.

No. 2559. Lemon Extract, manufactured by J. C. Fletcher Co., Kansas City, Mo. Bought at Jetmore. This sample contains about forty per cent. of alcohol. The oil used is probably genuine, although the amount is small.

No. 2555. Primrose Flavoring Extract of Vanilla, manufactured by Parkhurst-Davis Mercantile Company, Topeka, Kan. Bought at Jetmore. This is an artificial extract, containing some added coumarin and vanillin.

No. 2556. Extract of Vanilla, manufactured by Forbes Bros., St. Louis. Bought at Jetmore. Said to be five times stronger than the ordinary extract. This contains resins and other substances indicating that it is a genuine extract. It has probably been strengthened by the addition of artificial vanillin.

No. 2648. Extract of Vanilla, manufactured by the Kenwood Preserving Company, Chicago. This sample contains natural resins and no caramel. The constituents found indicate that it is genuine.

OLIVE OIL.

Olive oil is quite liable to be adulterated with cheaper oils, especially peanut oil and cottonseed oil. The following samples of olive oil, from the specific gravity, index of refraction, and other tests, appear to be genuine and free from adulteration:

No 2633. Olive Oil, sold by S. Tripp, Hoyt, Kan.

No 2637. Italian Lucca, G. Bartoni & Co., Leghorn, Italy.

No. 2649. Huile d'Olive, Extra Superieure Merbell brand, Bordeaux, France.

No. 2652. Pure Olive Oil, imported, Heinz, Pittsburg, Pa.

VINEGAR.

Analyses were made of two samples of vinegar, which were reported in Bulletin No. 1, January, 1906. This examination has been continued by tests of five samples of vinegar received from the secretary of the State Board of Health and purchased in Topeka. The results are as follows:

No. 2673. Ridenour-Baker Company, Kansas City. Sample taken from fifty-gallon barrel labeled "White Wine Vinegar." This vinegar contains 4.37 per cent. of acetic acid, 0.23 per cent. of total solids, and 0.07 per cent. of ash. The remarks made in Bulletin No. 1 in regard to the so-called "White Wine Vinegar" apply to this sample. It is evidently a distilled or alcohol vinegar. According to Leach, "In the United States the term 'White Wine Vinegar' is usually applied to distilled or spirit vinegar, which is much cheaper than the real wine vinegar and altogether inferior to it."

No. 2674. Sample labeled "Cider Vinegar," Washburn Cidermill, Topeka. This contains 3.15 per cent. of acetic acid, 2.14 per cent. of total solids, and 0.16 per cent. of ash. There is nothing to indicate that this is not a cider vinegar, as stated. The sample is, however, deficient in acetic acid (the acid of vinegar); or, in other words, it is too dilute. In many states the law fixes the minimum amount of acetic acid that shall be present, but it is hardly ever below 3.5 per cent. The minimum per cent. of acetic acid in forty-four analyses, quoted by one of the best authorities, for genuine cider vinegar, is 3.58 per cent, while the average amount of acetic acid is 4.65 per cent.

No. 2675. Sample taken from barrel labeled "Pure Cider Vinegar," H. J. Heinz, Pittsburg, U. S. A. This contains 4.51 per cent. of acetic acid, 2.40 per cent. of total solids, and 0.18 per cent. of ash. A genuine cider vinegar.

No. 2676. Sample labeled "Pure High-grade Cider Vinegar," Capital City Chemical Company, Topeka. This is sold in bottles. The sample contains 3.66 per cent. of acetic acid, 0.24 per cent. of total solids, and 0.03 per cent. of ash. This is not a genuine cider vinegar, but belongs to the same class as 2773; that is, it is distilled or alcohol vinegar. This is a flagrant case of *misbranding*, and the sale of a vinegar of this class is distinctly prohibited by the General Statutes of Kansas.

No. 2677. Sample taken from bottle labeled "Crosse & Blackwell, Soho Square, London, Tarragon Vinegar." This contains 5.67 per cent. of acetic acid, 2.85 per cent. of total solids, and 0.51 per cent. of ash. As it is labeled "Tarragon Vinegar," a specially flavored vinegar much used in England especially, it would not be expected to correspond exactly to cider vinegar in its properties. A good quality of wine or cider vinegar appears, however, to be the basis for the manufacture of this sample.

MAPLE SYRUP AND HONEY.

No. 2646. "New York Maple Syrup, put up expressly for Boyle & Williams, Bradford, Pa." Purchased at Pittsburg, Kan. This statement appears on the label: "Pan-American Exposition, Highest Award." This sample consists largely of cane-sugar, though it may contain a little genuine maple syrup for flavoring material. This same brand is reported as "illegal" in the Minnesota Food Commissioners' Report for 1905.

No. 2554. Honey, from Central Mercantile Company, Hutchinson, Kan., shipped from California. Purchased at Jetmore, Kan. The constituents found indicate that this sample is genuine.

No. 2616. Pure Honey, put up by the Cleveland Health Food Company, Cleveland, Ohio. The constituents found and their proportion indicate that this is a genuine strained honey.

No. 2664. "Honey," "Fancy," put up by the St. Louis Syrup and Preserving Company. The constituents found indicate that this sample consists largely of glucose with added flavoring material.

CANDY.

No. 2613. Sample received from Jetmore, Kan. This contains cane-sugar, starch, and glucose. Cane-sugar and glucose are both considered proper constituents, but the starch, unless present in very small quantities, is regarded as an adulteration.

No. 2532. Sample purchased in Lawrence. This was highly colored with anilin red and anilin yellow. These so-called coal-tar dyes are frequently used in candy. Many of them are considered harmless. The sample did not contain saccharin or starch.

No. 2542. Sample purchased as hoarhound candy, in Lawrence. It was very highly colored reddish brown with anilin, and contained both starch and glucose.

CHOCOLATE.

The raw material from which cocoa and chocolate are made is the seed of the cacao tree. The products obtained are known as cocoa, chocolate, sweet chocolate, and cocoa shells. Plain chocolate is prepared by grinding the roasted seed and pressing into cakes. This product contains about fifty per cent. of a fat called "cocoa-butter." Sweet chocolate is the same as the ordinary chocolate, but frequently has as much as fifty per cent. of sugar added. In the manufacture of cocoa, which consists of the roasted and ground seeds, sometimes considerable of the fat is removed. Another product is the cocoa shells, but these have little food value.

No. 2614. Justice brand Sweet Chocolate, manufactured by Wm. H. Baker. Received from Jetmore, Kan. This contained 53.25 per cent. of sugar.

No. 2515. Justice brand Premium No. 1 Chocolate, manufacfactured by Wm. H. Baker. Received from Jetmore, Kan. This contained 41.03 per cent. of fat. The tests made on this fat indicated that part of the cocoa-butter had been removed and beef stearin had been substituted.

CANNED FRUIT.

No. 2628. White Cherries, Merbell brand, Kansas City Wholesale Grocery Company. Our attention was called to this sample on account of the fact that the color of the fruit was a very dark purple. Tests made on it showed that this was due to some organic acid, probably tannic, acting upon the iron of the cans. This frequently occurs with strongly acid fruit, especially when a low grade of tin is used.

JAMS, JELLIES, AND PRESERVES.

The examinations begun and reported in Bulletin No. 1 have been continued.

No. 2585. Blackberry Jelly, St. Louis Syrup and Preserving Company. This is colored with coal tar dye, preserved with sodium sulfite, sweetened with glucose, and contains some starch.

No. 2586. Clover Leaf brand Raspberry Jelly, Chicago Concentrating Company. Upon the label, in *extremely* fine type, is the word "compound," and the statement that it contains grape-sugar and fruit juice and is colored and flavored. This sample is colored with coal tar dye, preserved with benzoic acid, and sweetened with glucose.

No. 2587. Cranberry Sauce, Block-Horn Preserving Company, Kansas City. This sample is colored with coal-tar dye, preserved with salicylic acid, sweetened with glucose, and contains some starch and a small quantity of saccharin. As previously mentioned, saccharin is a substance made from coal-tar, which is nearly 500 times as sweet as cane-sugar, and so is often used to take its place.

No. 2588. Damson Plums, Queen City Preserving Company, the J. Weller Co., Cincinnati, Ohio. Upon the label is a statement that the product contains sixty-five per cent. of fruit, fifteen per cent. of sugar, and twenty-five per cent. of corn syrup. This sample contained only small quantities of preservatives, which may have been accidental, and the color is natural.

No. 2589. Pear Jam, Congress brand, Kansas City Wholesale Grocery Company. This sample is preserved with sodium sulfite and sweetened with glucose.

No. 2590. Dinner Party brand Fancy Quality Red Currant Jam, Orchard Park Canning Company, Erie county, New York. This material is colored with coal-tar dye and sweetened with glucose. No preservatives were found. It is quoted in the Minnesota State Dairy and Food Report of 1905 as "illegal."

No. 2591. Highland brand Peach Preserves, Extra Quality, Williams Bros., Detroit, Mich. This sample is sweetened with glucose and saccharin. The color is natural and no preservatives were found. Samples that contain notable quantities of preservatives are usually not moldy. This sample was slightly moldy.

No. 2592. Williams Bros.' "Best Quality Blackberry-flavored Jelly Compound," Williams Bros., Detroit, Mich. This sample carries on the label the following statement: "Fifty per cent. apple juice, forty-five per cent. glucose, five per cent. granulated sugar." It does not pretend to be a blackberry jelly, but simply a "flavored jelly compound." There was no indication of the presence of a notable quantity of preservatives or of a coal-tar dye.

No. 2593. Orchard brand Fancy Apple Butter, Bliss Syrup Refining Company, Kansas City, Mo. This sample is preserved by sodium sulfite and sweetened with glucose; the color appears to be natural. The taste is slightly stringent.

No. 2594. American Beauty Preserved Red Raspberries, packed by John Boyle Company, Baltimore, Md. The color appears to be natural, but the material is sweetened with saccharin, contains glucose, and is preserved by sodium benzoate.

No. 2645. Plum Preserves, St. Louis Syrup and Preserving Company, Columbia brand, Compounded. On the label, which is covered as much as possible by the word "Columbia," appears this statement: "Twenty-five per cent. selected fruit, thirty-one per cent. apple juice, thirty-seven per cent. corn syrup, six per cent. granulated sugar." This sample is colored with coal-tar dye, preserved with sodium sulfite, and sweetened with glucose.

TOMATO CATSUP.

No. 2651. Kinzie brand, Huss-Edler Preserving Company, Chicago. On the label appears this statement: "Prepared from carefully selected stock and richly flavored." This is highly colored with coal-tar dye; contains saccharin and sodium benzoate.

CANNED VEGETABLES.

The following samples of canned peas were examined:

No. 2521. Extra Fine Peas, J. T. Polk Company, Greenwood, Ind. Size good, not soaked; no artificial color or preservative.

No. 2523. Congress brand, Kansas City Wholesale Grocery Company. No preservatives or coloring indicated.

No. 2524. Waldorf brand Extra Sweet Peas, Fort Stanwix Canning Company, packed at Rome, N. Y. Some of these peas had started to germinate, which indicated that they were too dry when canned and had been soaked.

No. 2525. Extra Sifted Early June Peas, Merbell brand, Kansas City Wholesale Grocery Company. No preservatives or coloring indicated.

No. 2527. Reynold's Pathfinder Fancy Sifted Peas, Reynolds Preserving Company, Sturgeon Bay, Wis. Sample uneven in size. No preservatives or coloring indicated.

No. 2528. Jule Dupont, Petit Pois, Moyens. No preservatives or coloring indicated.

NITROGENOUS FOODS — SAUSAGES.

No. 2682. A variety of samples of different kinds of sausages, such as Wiener, Bologna, etc., purchased in Kansas City, and put up by the Nelson Morris Company, were examined. One of these contained sulfites in small quantities, and one, the bologna sausage, contained considerable borax.

No. 2683. Ham Sausage, put up by Swift. No preservatives were found.

No. 2684. Sausage, put up by the Schwarzschild & Sulzberger Company, Kansas City. No appreciable quantity of preservatives found.

No. 2685. Newer Bros., Kansas City, Sausage. Only traces of sulfite found.

No. 2686. Chopped Sausage, put up by Peet, Kansas City. This sample contained considerable sodium sulfite as a preservative and for the purpose of retaining the red color.

No. 2687. Several varieties of sausage, put up by the Fowler Packing Company, Kansas City. No appreciable quantity of preservatives was found.

No. 2687*a*. Several samples of sausage, put up by the Fowler Packing Company, Kansas City, examined, were found to be preserved with sodium sulfite.

Nos. 2712 to 2716, inclusive. Several samples of sausage of various kinds, purchased in Kansas City, and put up by the Armour Packing Company, were examined for preservatives, with negative results.

No. 2518. Oysters from Texas were examined for borax and none was found.

No. 2519. Oysters from Norwalk, Conn., were examined for borax and this preservative was not present.

No. 2667. Yacht Club Concentrated Mock Turtle Soup, put up by Reid, Murdock & Co., Chicago. Sample examined for preservatives and none were found.

POISONED FOOD.

No. 2690. A peculiar case of what appeared to be food poisoning occurred recently at Great Bend and was reported by Doctor McPherson. We received (Lab. No. 2690) a sample of cheese. This was carefully examined for arsenic, as the symptoms reported indicated a poison of that character. The test showed that arsenic was not present.

As stated in a previous report, it is quite probable that the poisoning in this case was from what is known as "cheese poison," which was investigated very thoroughly in Michigan several years ago. This is a poison of the ptomain class, and is produced in milk, cheese, cream, etc., when the material is stored in dark, dirty or unventilated places. A sample of the cheese has been preserved to examine for the toxins.

No. 2691. Three lots of different colored candy from Great Bend were examined for poison. The colors were yellow, yellowish red, and intense pink. This coloring matter was all made from coal-tar. The candy contained considerable starch, but no saccharin. A special test was made for arsenic, with negative results.

In carrying out the above work, I wish to acknowledge the valuable assistance rendered by Dr. F. W. Bushong, Dr. R. W. Curtis, Mr. Frank Gephart, and Mr. E. F. Nelson.

Respectfully submitted. E. H. S. BAILEY,
Chemist for State Board of Health.

PROFESSOR WILLARD'S REPORT.

MANHATTAN, KAN., June 16, 1906.

Dr. S. J. Crumbine, Secretary State Board of Health, Topeka:

DEAR DOCTOR—In accordance with your request, I submit the following report upon the food samples submitted to me for examination, together with some discussion of the practical aspects of the use of preservatives in food, and of adulteration.

At no time in the history of the country has the interest in pure, clean, wholesome food been so great as at present. This interest is seen in the study of the fundamental factors of nutrition in respect to quantity, kind and composition of food, as well as in the wide-spread awakening concerning cleanliness and sanitation in large establishments producing, preparing or handling foods.

The question of preservatives in food, and of the use of additions or processes designed to improve, or appear to improve, the quality of them, is one that cannot be settled by a few bold, bare assertions, but has at least more than one side to it. There is, too, the case of articles that are alleged to be injurious, such as alum baking-powders, which some would prohibit. A step further would bring to consideration natural articles known to be difficult of digestion. We might pass by easy steps from articles that all would agree should be prohibited to those that all would admit to be perfectly wholesome. Where to draw the line is the problem.

No extended discussion of the use of preservatives will be entered upon here. Certain ones, such as sugar, salt, and vinegar, have been used for ages, and no one questions their legitimacy. Antiseptic constituents naturally occur in some articles of food; for example, cranberries contain notable quantities of benzoic acid, to which doubtless is to be attributed the keeping qualities they exhibit. From fruits in which nature has placed an antiseptic to those with which man has provided the same is but a step; but is it legitimate? Is it promotive of public health? The answer to this question must involve consideration of complex relations. Could we be sure that preservatives were added only to perfectly wholesome articles, and were used in minimum quantities, the problem would be simpler. But, as a matter of fact, the preservatives are probably used carelessly, in quantities designed to be sure to prevent fermentation and to check decompositions that have already set in, rather than in minimum amounts.

The actual physiological effects of preservatives can be settled only by experiments. As is well known, such investigations are under way, in charge of the Bureau of Chemistry of the United States Department of Agriculture, and, as far as boric acid and borax are concerned, results have been obtained showing that their use is prejudicial.

There can be little doubt that in the case of most preservatives, if not all, their presence interferes with digestive processes. Whether more so than results from the use of certain natural, almost unquestioned articles is debatable. If this be the case, it would seem that the first and most strenuous efforts in food control should be directed toward securing correct branding. The label should show what preservatives, if any, are used, and the quantities. An individual would then be free to use the article or not, just as he may partake of raw onions or leave them alone. With the conscious use of articles containing preservatives, a fund of knowledge on the part of the public would be accumulated which would serve as a basis for legislation based on general experience. This might result in the complete prohibition of certain preservatives while others would be permitted under proper restrictions.

In respect to adulterations, the problem to the writer seems simpler. An adulteration has but one purpose; that is, of passing off an article of a quality inferior to that which the consumer supposes it to be. Such deception should be repressed without mercy. Akin to this, though not identical, is the sale of pure goods of inferior grade, representing them to be of the first quality. Against such frauds perhaps we will have to set the common sense and experience of buyers.

CANNED VEGETABLES AND FRUIT.

The enormous volume of trade in canned goods is scarcely appreciated by us. According to Leach, about 350,000,000 cans per annum of corn, peas and tomatoes are put up in the United States. To this must be added the other vegetables and fruit. Sterilized by heat, and sealed from contamination by germs, there is no class of foodstuffs that is so little in need of preservatives. It should be taken as almost positive evidence of careless methods in packing if preservatives are found present. These may have been used to prevent stock spoiling while awaiting the final process of canning, or to assist in preserving it from further deterioration, fermentation having set in. In many cases artificial coloring is resorted to in order to make the goods more attractive. This is especially the case with tomatoes, and indeed with them the matter is often overdone and they are colored beyond the natural degree.

A somewhat important consideration in connection with canned goods is the character of the container. If the tin plating is largely adulterated with lead, or if the solder, which contains lead, comes in contact with the fruit or vegetables, the food is liable to be contaminated by the poisonous metal. We have not tested all of the samples for metals, but observed the condition of the containers, and any special features noted are mentioned.

The canned goods reported on below were selected with the object of representing different grades as well as the different kinds. The number of companies engaged in this business is too large to permit representation of more than a very small percentage of them. They were all purchased in Manhattan.

No. 1. Sunburst Tomatoes, guaranteed by Kaw Valley Canning Company, Lawrence, Kan. Apparently packed by the Simpson & Doeller Company, Baltimore, Md. Price, 12½ cents. Net weight, 32.1 oz. Boric acid, beta-naphthol, formaldehyde, sulfites and benzoic acid absent. Test for salicylic acid uncertain.

No. 2. Monarch Extra Tomatoes, Reid, Murdoch & Co., Chicago, Ill. Price, 20 cents. Net weight, 35 oz. Boric acid, sulfites, formaldehyde, beta-naphthol and benzoic acid absent; salicylic acid uncertain.

No. 3. Waldorf Solid-packed Tomatoes, Fort Stanwix Canning Company, Rome, Oneida county, New York. Price, 12½ cents. Net weight, 36.7 oz. Can soldered on the outside. Boric acid, sulfites, formaldehyde, beta-naphthol and benzoic acid absent; salicylic acid uncertain.

No. 4. Reindeer Pumpkin, Reid, Murdoch & Co., Chicago, Ill. Price, —. Net weight, 33.2 oz. Much solder exposed inside can, and loose solder present also. Can badly corroded inside. Artificial coloring not detected. The presence of salicylic acid was doubtful, and boric acid, benzoic acid, beta-naphthol, sulfites and formaldehyde were absent.

No. 5. Club House Pumpkin, Franklin MacVeagh & Co., Chicago, Ill. Price, 15 cents. Net weight, 33.8 oz. No indication of salicylic, benzoic or boric acids, beta naphthol, sulfites, or formaldehyde.

No. 6. Lange's Island Sweet Pie Pumpkin, Lange Canning Company, Eau Claire, Wis. Price, 10 cents. Net weight, 32.7 oz. Formaldehyde, sulfites, beta-naphthol, boric acid and benzoic acid not indicated; salicylic acid uncertain. Solder inside can badly exposed to action of its contents.

No. 7. Perfection Sugar Corn, the Bloomington Canning Company, Bloomington, Ill. Price, 10 cents. Net weight, 21.5 oz. Boric acid, benzoic acid, sulfites, formaldehyde and salicylic acid not found. Saccharin not present. Saccharin is an artificial substance which possesses a very sweet taste, and is sometimes added to corn or other canned goods to give them a sweetness that they would otherwise lack. It has no nutritive value.

No. 8. Elgin Cream Sugar Corn, Elgin Canning Company, Elgin, Iowa. Price, 10 cents. Net weight, 20.7 oz. Boric acid, sulfites, formaldehyde, salicylic acid, benzoic acid and saccharin were absent.

No. 9. Argonaut Sweet Kernel Cream Corn, Fort Stanwix Canning Company, Rome, Oneida county, New York. Price, 15 cents. Net weight, 20.2 oz. Gave negative results with tests for boric, salicylic and benzoic acids, sulfites, formaldehyde, beta-naphthol, and saccharin.

No. 10. Moss Rose Oven-baked Beans, Elyria Canning Company, Elyria, Ohio. Price, 5 cents. Net weight, 9.7 oz. Boric, salicylic and benzoic acids, sulfites, formaldehydes and beta-naphthol absent.

No. 11. Van Camp's Pork and Beans, the Van Camp Packing Company, Indianapolis, Ind. Price, 10 cents. Net weight, 12.3 oz. Boric and salicylic acids, sulfites, beta-naphthol and formaldehyde not present. Benzoic acid found in considerable quantity,

No. 12. Heinz's Baked Beans with Tomato Sauce. Price, 10 cents. Net weight, 12.7 oz. Salicylic acid doubtful. Benzoic and boric acids, sulfites, formaldehyde and beta-naphthol absent.

No. 13. Sunburst Golden Wax Beans, guaranteed by the Kaw Valley Canning Company, Lawrence, Kan. Apparently packed by the Simpson & Doeller Company, Baltimore, Md. Price, 10 cents. Net weight, 20.2 oz. No reactions obtained for boric, salicylic or benzoic acids, sulfites, formaldehyde, or beta-naphthol.

No. 14. Club House Refugee String Beans, packed for Franklin McVeagh & Co., Chicago, Ill. Price, 18 cents. Net weight, 19 oz. Salicylic acid doubtful. Boric and benzoic acids, sulfites, formaldehyde and beta-naphthol absent.

No. 15. Morgan & Clark Early June Peas, packed for J. H. Leslie & Co., agents, Chicago, Ill. Price, 5 cents. Net weight, 21.1 oz. Salicylic acid doubtful. Benzoic and boric acids, formaldehyde and sulfites absent. The peas were of a yellowish color and apparently not artificially colored.

No. 16. Little Quaker Peas, W. R. Roach & Co., Hart, Mich. Price, 18 cents. Net weight, 21.1 oz. Salicylic, benzoic and boric acids, formaldehyde and sulfites not indicated.

No. 17. Petit Pois, Moyens, Jules Dupont. Price, 20 cents. Net weight, 15.3 oz. No indications were obtained of salicylic, benzoic or boric acids, sulfites, or formaldehyde. These imported French peas were of a fine green color, and investigation showed them to contain a considerable quantity of copper. The container was not corroded internally at all, and the solder was exposed but very slightly to the action of the peas.

No. 18. Nigger Head Blackberries, Aughinbaugh Canning Company, Baltimore, Md. Price, 10 cents. Net weight, 19.8 oz. Benzoic, salicylic and boric acids, sulfites and formaldehyde absent. The inside of the can was very badly corroded, but the solder was exposed but slightly.

No. 19. Fruit Belt Champion Black Raspberries, the Fruit Belt Canning Company, Watervliet, Mich. Price, 10 cents. Net weight, 18.8 oz. Boric and salicylic acids, sulfites and formaldehyde absent. Benzoic acid may have been present as a trace.

Consideration of the general results of the examination of the canned goods, as set forth above, is on the whole quite encouraging. But few undoubted cases of the use of preservatives were detected. In respect to the test for salicylic acid, it may be explained that in certain cases reactions were obtained that resembled those yielded by that substance, but they were not sufficiently sharp to warrant a positive statement that it was present. It seemed more probable in some cases that the method of investigation used, though standard, was at fault. Where nothing was stated in respect to the condition of the containers, it is to be understood that they showed a certain amount of corrosion and that the solder was so applied as to be exposed to the contents of the can to a moderate extent. The character of the food preserved doubtless has as much to do with the extent of the corrosion as does the quality of the tin plate used, the acid fruits being far more active than the vegetables.

PICKLES.

A few samples of pickles were submitted, and tested to a certain extent, with the following results:

No. 25. Perfection Pickles, Marshall Vinegar Company, Marshalltown, Iowa. Benzoic and salicylic acids were absent; also, sulfites and formaldehyde.

No. 26. Home-made Pickles, Eureka Pickle Company, St. Louis, Mo. Salicylic, benzoic and boric acids absent; copper absent; aluminium present. The aluminium indicates the use of alum to give crispness to the pickles.

No. 27. Everbest Spiced Mixed Pickles, Glaser, Kohn & Co., Chicago, Ill. Boric, salicylic and benzoic acids not found. Copper absent; aluminium found, indicating the presence of alum.

No. 28. English Spiced Sweet Gherkins, the Williams Bros. Company, Detroit, Mich. Boric and salicylic acids and copper absent; benzoic acid and aluminium present. Here we have the addition of a preservative as well as the alum.

CONDIMENTS.

Our work has been rather fragmentary on the condiments and flavoring materials submitted. Time has not permitted any detailed researches, part of which, in any event, would need to be microscopical rather than chemical. On these accounts the spices have not been examined at all. It is a matter of notoriety that spices, especially in the ground state, are badly adulterated. This in most cases depreciates the value without adding anything positively injurious. Flavoring extracts are often artificial, or imitations of the preparation made from the natural sources. Such as we have examined of these classes of goods are reported upon below.

No. 35. Vanilla Extract, Van Duzer Extract Company, New York. This sample was too small for quantitative examination. It contained vanillin, one of the constituents of the vanilla bean, and coumarin was not detected, indicating that the inferior tonka bean had not been substituted for vanilla. As far as our examination went, the preparation seemed to be genuine.

No. 36. Extract of Raspberry, Victor Flavoring Extract Company, Topeka, Kan. Raspberry flavoring is generally recognized to be an artificial preparation, and according to Leach it is a highly complex mixture, no less than fifteen different distinct compounds being used. It would be quite impracticable for us to separate these and determine the quantities of each, especially considering the smallness of the sample furnished. A determination of the mean molecular weight of the acids represented in the ethereal salts contained in it gave figures somewhat below those required for butyric acid, indicating that the ethereal salts used were probably largely butyrates. The alcohol present was chiefly ordinary ethyl alcohol, both that in combination and that in the free state. As nearly as we can tell, the substance is about what should be expected.

No. 23. Prepared Mustard Mixture, Westmoreland Specialty Company, Grapeville, Pa. This sample gave no indication of the presence of formaldehyde, sulfites, salicylic acid, or benzoic acid. No further examination was made.

No. 24. Moutarde Imperial, Columbia brand, Haarmann Pickle Company, Omaha, Neb. This mustard was tested to the same extent as No. 23, and with similar results.

No. 20. Blue Label Tomato Ketchup, Curtice Bros., Rochester, N. Y. No indication of the presence of boric acid, sulfites, or formaldehyde. Tests for salicylic acid gave doubtful results, but indicated its presence as probable. Benzoic acid was proved to be present in large amount.

No. 21. Defiance brand Ketchup, Letts-Spencer Grocer Company, St. Joseph, Mo. Boric acid absent; salicylic acid doubtful; sulfites present in small quantity; benzoic acid present in considerable quantity.

No. 22. Yacht Club Salad Dressing and Cold Meat Relish, Tildesley Company, Chicago, Ill. Formaldehyde and boric acid absent; salicylic acid test unsatisfactory; benzoic acid present in considerable amount.

MILK.

Standard milk as promulgated by the secretary of agriculture "is the lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within fifteen days before and five days after calving, and contains not less than twelve per cent. of total solids, not less than eight and one-half per cent. of solids not fat, and not less than three and one-quarter per cent. of milk fat."

Eight samples of milk bought in the Topeka market were examined as to per cent. of butter-fat and presence of formaldehyde and salicylic, benzoic and boric acids. In all cases neither formaldehyde, boric acid nor borax was present. Tests for salicylic and benzoic acids were not altogether satisfactory, but no conclusive evidence of their presence was obtained. The samples came from the following-named dealers and showed the percentages of fat stated: Hughs & Jones, 3.85; Topeka Pure Milk Company, 4.40; Peter Heinz, 3.80; Kinkead & Pugh, 4.10; W. Bradbury, 3.20; F. Sadlemire, 3.40; T. C. Meggins, 4.40; Bigger's dairy, 3.80.

BUTTER.

It is safe to say that with the establishment of creameries there has been a great improvement in the average quality of the butter on the market. It is probable that there are few foodstuffs prepared with greater care to prevent addition of foreign substances than is butter. Here we must note the exception that artificial coloring has become so general that it is treated as not an adulterant in the terms of the United States law. To many this use is regarded as unfortunate. By means of artificial color the product of a creamery may be brought to uniformity of tint, and to a considerable extent that of all creameries is alike. This, which is regarded as an advantage, is really the ground of legitimate objection. It is well-known that butter produced from green feed has a finer flavor, as well as more color. The natural color of butter is thus one index to its quality, and coloring butter originated in fraudulent effort to make a less desirable product compete successfully with the best. The practice of coloring butter is now so firmly fixed, and the taste of consumers so bent to the false standard, that it is not probable that it will ever be abandoned. It would, however, logically be just as legitimate and sensible to paint artificially the less well-colored apples or peaches "to give uniformity to the product."

Though preservatives are probably seldom used in butter designed for the domestic market, there is one point to which unremitting attention should be given; that is, the water content. It is apparent without argument that water is not butter, and that the more water a manufacturer can palm off incorporated with butter in pound prints, the greater his profits and the less value the consumer gets for his money. The United States internal-revenue service has adopted 16 per cent. as the maximum amount of water that may be present. More than that subjects it to classification as adulterated butter. The percentage named has been promulgated by the secretary of agriculture as the maximum amount that may be present in renovated butter, and as all butter, by the same authority, must have at least 82.5 per cent. of fat, it is evident that genuine butter, with its usual content of salt and casein, can scarcely have as much as 16 per cent. of water.

According to the United States law, adulterated butter is defined to be: "A grade of butter produced by mixing, reworking, rechurning in milk or cream, refining, or in any way producing a uniform, purified or improved product from different lots of melted or unmelted butter or butter-fat, in which any acid, alkali, chemical or any substance whatever is introduced or used for the purpose or with the effect of deodorizing or removing therefrom rancidity, or any butter or butter-fat with which there is mixed any substance foreign to butter as herein defined, with intent or effect of cheapening in cost the product, *or any butter in the manufacture or manipulation of which any process or material is used with intent or effect of causing the absorption of abnormal quantities of water, milk, or cream";* that "process butter" or "renovated butter" is hereby defined to mean butter which has been subjected to any process by which it is melted, clarified, or refined, and made to resemble genuine butter, always excepting "adulterated butter."

Three samples of butter have been examined. None of them gave evidence of renovation or the presence of preservatives. The results of the analyses are tabulated below:

	Butter-fat.	Water.	Curd.	Salt and ash.
No. 32, "Primrose," Continental Creamery Company	74.80	18.60	1.90	4.70
No. 33, "Meadow Gold," Continental Creamery Company	75.09	20.57	.99	3.35
No. 34, "Avondale," Morris Creamery Company	79.77	17.05	.97	2.21

It will be seen that all three of the samples contained an excessive amount of water and lacked considerably in meeting the legal standard of 82.5 per cent. of fat. The temptation to increase the "overrun" by this fraudulent incorporation of undue quantities of water is very great.

Exclusive of wrappings, the print of Meadow Gold butter, including the parchment paper, weighed 418 grams, which is less than 15 ounces. The Avondale print, with its parchment wrapper, weighed 429 grams, and was thus nearly an ounce short in weight. These are the weights of the prints when received at the laboratory, but they could have lost but very little weight in transmission, and even that would have been water, which they possessed in undue quantity.

FLOUR.

Four samples of flour were submitted, to be tested for copper sulfate, alum, and chemical bleach. The brands were as follows: Fanchon, Big 4, Big T, and Faustitas. On account of lack of time no test was made for copper sulfate, the probability of its presence being extremely small. The flours were tested for alum, and found free from it, as was to be expected. There is probably no food product that is less liable to adulteration at present than flour, such sophistications as appear in bread being attributable to the baker rather than the miller.

The chemical bleaching of flour is a process of but recent introduction, almost its entire development being within the last three years. In the issue of the *Modern Miller* for June 9, 1906, the Alsop Process Company, in an advertisement, states that "Two-thirds of the flour now actually manufactured in the United States is being electrically aged and purified. Five milling companies, alone aggregating nearly one-third of all the flour manufactured in the United States, are using this process. The most successful mills in the United States and foreign countries are thus using it." The milling journals for months have given much space to the discussion of the different processes, their effects upon the product, etc. No effort toward secrecy has been made. Whether the legitimacy of the process should be challenged by boards of health or not is a question that will probably be forced to consideration before long. The bleaching process is practically controlled by one company. The machinery, with right to use it, is very expensive, and already we see in advertisements millers who have not installed the necessary machinery endeavoring to bring bleached flour into disrepute. The ultimate judgment on the question will have to be rendered by the public, either through legislation or by a more effective method expressed by purchasing the product preferred.

While various claims by different inventors have been made concerning the chemistry of the bleaching process, it seems clear that in all cases oxides of nitrogen are the effective substances present. These oxides are produced by passing a current of air through the electric arc, the discharge taking place between copper electrodes. At the high temperature of the arc some of the nitrogen of the air combines with oxygen and, being removed at once passes on with the current of unchanged air to apparatus in which the flour is agitated with the air containing the nitrogen oxides The chemistry of the bleaching which takes place has not yet been studied exhaustively. Work upon the bleaching gases and their products in the flour is in progress in this laboratory.

Users of artificial bleaching, or, as they prefer to call it, "aging," maintain that the process brings about in a few seconds a change in the flour which would take place naturally in the course of several months; that is, a flour which by holding in store a number of months would improve by becoming whiter in color may be bleached to the same color by passing through the apparatus. It is further claimed that flour made from new wheat can be used much more satisfactorily in baking if artificially bleached than if not so treated. Whatever may be said in favor of the improvement of flour by this means, it cannot be successfully maintained that the change which takes place is the same as that which takes place by natural aging. Natural aging does not produce the oxides of nitrogen or the products of their action on flour.

The oxides of nitrogen in the presence of water, such as the moisture of the flour, produce nitric and nitrous acids, and artificially bleached flour shows a slightly greater acidity than untreated flour. Whether this acidity is sufficient to account for all of the oxides of nitrogen entering into the combination or not, we have yet to learn. In any case, the quantity is excessively minute, and its detection by ordinary means practically impossible. We have, however, devised a test for bleached flour that is delicate and expeditious. It has not been rigorously tested upon large numbers of samples of known origin, but there is no reason to believe that it will fail to meet at least all practical requirements. A small quantity of the flour—a teaspoonful is ample—is shaken with a few cubic centimeters of distilled water, and the mixture tested for nitrites by Griess's method. In applying this we have used the modification suggested by Ilosvay, who uses acetic acid instead of mineral acid. One-half gram of sulfanilic acid is dissolved by heat in 150 cubic centimeters of dilute acetic acid. One-tenth gram of alphanaphthylamine is heated with twenty cubic centimeters of strong acetic acid and the colorless solution poured off from the residue and mixed with 130 cubic centimeters of dilute acetic acid. For use, the two solutions are mixed in equal quantities and two cubic centimeters of the mixed solution added to the liquid to be tested.

This reagent, added to the mixture of flour and water and allowed to stand for a few minutes, develops a distinctly pink color if nitrites are present. As far as our experience has gone, no untreated flour responds to this test for nitrites, while bleached flours do. The delicacy of the reaction may be increased by settling the flour out of the water by means of the centrifuge and testing the clear, water solution. It may be possible that by sufficient lapse of time the nitrites in the flour may become completely oxidized, but a sample exposed in a thin layer under a capacious bell jar for nearly three months still reacts strongly.

By the test described above, all of the four brands of flour named above but Faustitas gave evidence of artificial bleaching.

MEAT.

One sample of meat was submitted under the name of "New England Cooked Ham." It was the product of Morris & Co., St. Joseph, Mo. It kept very well at the temperature of the laboratory for a number of weeks. Tests for sulfites, benzoic acid and salicylic acid gave negative results, but boric acid was present in considerable amount.

In conclusion, I must acknowledge our indebtedness to Assistant Prof. W. E. Mathewson, upon whom the chief burden of the analytical work has fallen, and without whose painstaking skill the results would not have been secured. I regret that the exigencies of a heavily worked department have not permitted more extended researches than are set forth in the foregoing pages. Food inspection and control is a matter of such vital importance that it is to be hoped that the next legislature will make adequate provision for the employment of a sufficient force of chemists, as well as strengthen our laws relating to the manufacture and sale of foods.

Respectfully submitted.

J. T. WILLARD.

KANSAS STATE AGRICULTURAL COLLEGE,
Manhattan, Kan.

Tuberculosis in Politics.

A clipping under the above caption is taken from the Cincinnati *Enquirer* of June 20: "Modern science has demonstrated that consumption is a curable disease, and that this great scourge of the human race, at once so communicable and so deadly, may, by resort to proper treatment and by education in the laws of health, be almost wiped out as the terror of mankind. It is the duty of the state to do its part toward this beneficent end, and we hereby commit the republican party to the establishment and support of dispensaries, hospitals and sanitariums for the treatment of the consumptive poor." "The foregoing plank in the platform of the republican party of Pennsylvania, just adopted, anticipates the appropriation of millions of dollars to further the work undertaken by Lawrence F. Flick, president of the Henry Phipps Institute for the Study, Prevention and Cure of Tuberculosis. Dr. Leonard Pearson, of this institute, has perfected a serum which has cured consumption in cattle, and which is expected to eventually cure the disease in human beings." [The medical profession of Kansas might be induced to line up with the political party which will adopt a similar platform.]

The Sanitary Control of Public Buildings.

The health laws give the state and local boards of health sanitary control of public buildings in Kansas. An order was issued by the State Board of Health a short time since that the floors and halls of all public buildings, which include the court-houses and jails, shall be swept with sawdust dampened with a one or two per cent. solution of formalin, except in case of carpet on the floors; that janitors be instructed to dust with a dampened cloth, and that the old-fashioned feather-duster, by which the dust is knocked from one place to settle upon another, must be dispensed with. Cuspidors should be provided and placed in convenient portions of the building, and a number of notices posted which read, "Do not spit on the floor; to do so may spread disease." County and municipal health officers should see that this order is obeyed.

Food Inspection in Indiana.

The Bulletin of the Indiana State Board of Health for January publishes the following summary of foods and drugs analyzed, which shows the per cent. of adulterants found; it is interesting, in this connection, to note that the per cent. of adulterants in drugs, or those found below standard, is greater than that of foods analyzed:

ARTICLES EXAMINED.	Good quality.	Adulterated or varying from legal standard.	Total articles examined.	Percentage of adulteration.
Butter	4	0	4	0
Canned fruits, jellies, and jams	20	93	113	82.3
Cheese	1	0	1	0
Chocolate and cocoa	42	7	49	14.3
Coffee	15	8	23	34.8
Lard	1	1	2	50.0
Lemon extract	4	7	11	63.7
Maple syrup and sugar	5	49	54	95.8
Milk	8	6	14	42.8
Spices	140	108	248	43.5
Tomato catsup	8	54	62	87.0
Vanilla extract	6	3	9	33.3
Vinegar, cider	3	3	6	50.0
Vinegar, malt	1	0	1	0
Miscellaneous products	0	3	3	100.0
Wines	3	17	20	85.0
Totals	261	359	620	57.9
DRUGS:				
Aqua ammonia	7	56	63	88.9
Glycerine	14	47	61	77.0
Tincture of iron	14	3	17	17.6
Miscellaneous drugs	3	2	5	40.0
Totals	38	108	146	73.3

The analysis of sixty-two samples of tomato catsup, made by the Indiana State Board of Health, is herewith produced as a matter of information for consumers in this state:

TOMATO CATSUPS—LEGAL.

Lab. No.	Brand.	Manufacturer.	Benzoate of soda.	Color.	Starch.	Remarks.
140	Lippincott.	Lippincott Co., Cincinnati	Present			Legally labeled.
1424	Club House	Franklin MacVeagh & Co., Chicago				Pure.
1435	Chili Sauce.	Jos. Campbell Preserve Co., Camden, N. J.	Present			Legally labeled.
1443	Beefsteak	Jos. Campbell Preserve Co., Camden, N. J.	Present	Cochineal		"
387	Hoffman House	J. Weller Co., Cincinnati	Present			"
3449	Lippincott	Lippincott & Cree Co., Cincinnati	Present			"
3554	Blue Label.	Curtice Bros., Rochester, N. Y.	Present	Cochineal		"
1576	Pure Gold	J. Weller Co., Cincinnati	Present	Coal-tar dye	Excess	"

TOMATO CATSUPS—ILLEGAL.

Lab. No.	Brand.	Manufacturer.	Benzoate of soda.	Color.	Starch.	Remarks.
68	Sunnyside.	Tip-Top Ketchup Co., Cincinnati.	Present	Coal-tar dye	Excess	Bulk goods; saccharin present; adulterated.
235	Crystal	Hulman & Co., Terre Haute,	Present		Excess	Adulterated.
283	Yankee Doodle	American Relish Co., Indianapolis	Present		Excess	"
291	Bordeaux	Standard Packing Co., Indianapolis	Present			"
299	Butler's Tomato Ketchup.	Tip-Top Ketchup Co., Cincinnati.	Present			"
3[illegible]0	Tobasco Pepper.	Geo. A. Boyle, St. Louis	Present		Excess	"
366	Standard.	Hirsch Bros., Louisville	Present	Coal-tar dye	Excess	Illegally labeled; adulterated.
367	Phœnix Home-made,	Standard Packing Co	Present			Adulterated.
369	Everybody's	Greenwood Packing Co., Greenwood, Ind.	Present		Excess	Label on bottom; illegally labeled.
1395	Old Tavern.	Berdan & Co., Toledo	Present		Excess	Adulterated.
1414	Standard.	Hirsch Bros., Louisville	Present		Excess	Saccharin present; adulterated.
1415	Perfect	A. H. Perfect & Co., Fort Wayne	Present	Coal-tar dye		Adulterated.
1421	Sunlight	Royal Packing Co., Chicago,		Coal-tar dye		Saccharin present; adulterated.
1445	Matchless	Acme Preserve Co., Adrian, Mich	Present	Coal-tar dye	Excess	Adulterated.

TOMATO CATSUPS—ILLEGAL—CONTINUED.

Lab. No.	Brand.	Manufacturer.	Benzoate of soda.	Color.	Starch.	Remarks.
3373	Excellent	Excellent Canning Co., Indianapolis	Present	Coal-tar dye		Adulterated.
3406	Log Cabin	Marion County Preserving Co., Indianapolis	Present			Saccharin present; adulterated.
3324	Butler's	Tip-Top Ketchup Co., Cincinnati	Present	Coal-tar dye	Excess	Illegally labeled.
377	Live Oak	Hamilton Canning Co., Hamilton, Ohio		Coal-tar dye	Excess	Adulterated.
3440	Cadet	J. C. Perry & Co., Indianapolis, Ind		Coal-tar dye		"
441	Delmonico	W. D Huffman & Co., Indianapolis, Ind	Present	Coal-tar dye	Excess	Saccharin present; adulterated.
474	Standard	Exley-Watkins Co., Wheeling, W. Va.	Present		Excess	" "
3597	Love Apple	J. T. Polk & Co., Greenw'd, Ind	Present			" "
3598	Polk's Best	J. T. Polk & Co., Greenw'd, Ind.	Present			Adulterated.
1200	Bordeaux	Standard Packing Co., Indianapolis, Ind	Present	Coal-tar dye,		Saccharin present; adulterated.
3619		Huffman & Co., Indianapolis, Ind	Present	Coal-tar dye	Excess	" "
1215	Butler's	Tip-Top Ketchup Co., Cincinnati, Ohio	Present	Coal-tar dye	Excess	Illegally labeled.
3644	Sweet Home	Sweet Home Catsup Co., Indianapolis, Ind	Present	Coal-tar dye	Excess	Adulterated.
1230	Kentucky Moonshine	Kentucky Canning Co., Owensboro, Ky.		Coal-tar dye	Excess	Illegally labeled.
3651	Rose Bud	Court-house Grocery Co., Indianapolis, Ind	Present	Coal-tar dye	Excess	Adulterated.
1245	Delmonico	W. D. Huffman, Indianapolis, Ind	Present	Coal-tar dye	Excess	Saccharin present; adulterated.
1268	U. S.	Standard Packing Co., Indianapolis, Ind.	Excess present	Coal-tar dye		Adulterated.
1292		J. T. Polk & Co., Greenw'd, Ind	Present	Coal-tar dye	Slight excess	"
1342	Daisy	W. D. Huffman, Indianapolis, Ind.	Present	Coal-tar dye	Excess	Saccharin present; adulterated.

TOMATO CATSUPS—ILLEGAL—CONCLUDED.

Lab. No.	Brand.	Manufacturer.	Benzoate of soda.	Color.	Starch.	Remarks.
1367	**Butler's**	Tip-Top Ketchup Co., Cincinnati, Ohio	Present		Excess	Saccharin present; adulterated.
1467	**Star**	Star Packing Co., Hamilton, Ohio	Present	Coal-tar dye	Excess	Adulterated.
1476	**Hirsch's Standard**	Hirsch Bros. Co., Louisville, Ky.	Present	Coal-tar dye	Excess	Saccharin present; illegally labeled.
1290	**Blue Label**	Curtice Bros. Co., Rochester, N. Y.	Present			Adulterated.
1508	**Home Jersey**	Jersey Packing Co., Hamilton, Ohio		Coal-tar dye	Excess	"
1523	**May Day**	Greenwood Pickling Co., Greenwood, Ind.	Present	Coal-tar dye		Improperly labeled.
1566	**Goodman's High Grade**	Kahn & Co., Louisville, Ky.	Present	Coal-tar dye	Excess	Saccharin present; adulterated.
1672	**Cadet**	J. C. Perry & Co., Indianapolis, Ind	Present			Adulterated.
1677	**Hoosier**	Crescent Packing Co., Indianapolis, Ind		Coal-tar dye	Excess	Saccharin present; adulterated.
3098	**Queen of the Gas Belt**	Spencer & Hogin Co., Marion, Ind	Present		Excess	Adulterated.
3009	**Hero**	American Relish Co., Indianapolis, Ind	Present in excess	Coal-tar dye	Excess	"
3062	**Perfect**	A. H. Perfect, Fort Wayne, Ind	Present			"
3068	**Mother's Choice**	Early Packing Co., Xenia, Ohio	Present in excess			"
3150	**Pride of England**	Van Camp Packing Co., Indianapolis, Ind	Present			"
3168	**Matchless**	Acme Preserving Co., Adrian, Mich.	Present in excess	Coal-tar dye	Slight excess	"
3184	**Home Made**	C. F. Claussen & Son, Chicago, Ill.	Present in excess	Coal-tar dye		"
3228	**Acme**	Thacher-Keller Co., Indianapolis, Ind.	Present	Coal-tar dye	Excess	"
3256	**Yankee Doodle**	American Relish Co., Indianapolis, Ind	Present in excess	Coal-tar dye	Excess	"
3248	**El Mar**	Brinkmeyer, Kuhn & Co., Indianapolis, Ind.	Present			"
3260	**Rose Bud**	Bought of Court-house Grocery Co., Indianapolis, Ind.	Present in excess	Coal-tar dye	Excess	"
3288		Bought of Court-house Grocery Co., Indianapolis, Ind.	Present in excess	Coal-tar dye	Excess	"

Another Phase of the Pure-food Problem.

In the wide-spread discussion of the unsanitary condition of the great packing-houses we have overlooked a condition that prevails in almost every city and town in this country, which, in my judgment, is equally as disgusting and attended with much greater danger to the public health than the supposed conditions of the Chicago packing-houses, as set forth in the Neil-Reynolds report. I refer to the practice of grocers and fruit-dealers in displaying their goods on benches or boxes on the sidewalks in front of their stores, and which is so universal as to no longer attract attention or excite comment.

Since the discovery that mosquitoes play so important a part in the production of certain infectious diseases, the attention of sanitarians has been shifted from the night-prowling insect for the time being, and focused on the day scavenger, the fly, and the crimes already proven against him are sufficient to condemn him to destruction and quarantine whenever possible.

There is rarely any provision made by grocers, meat-marketers or fruit-dealers to keep flies off their goods, especially those displayed on the sidewalk, and a disgusting picture is presented daily of swarms of these flies feasting alternately on an adjacent pile of horse droppings, sputum (possibly tubercular), or other equally pestilential mess, and the sidewalk display of fruits, vegetables, or berries. In the small towns, the near-by privy vault and the filthy alley may be added to the moving picture. In addition to this, the passing breeze, laden with dust, in which may be found a plentiful mixture of the aforesaid dried horse droppings, sputum, etc., especially on paved streets, makes a generous sprinkling over the sidewalk show.

It may be said that the above picture is not elegantly painted, but it cannot be said that it is not true to life.

With the proof at hand that flies may carry the bacilli of typhoid on their legs and wings, and that the bacilli of tuceroulosis actually multiply in the flies' intestines; that it has been proven that a single fly-speck has contained as high as 50,000 tubercular bacilli—this, with the catching of filthy and often disease-borne dust on the sidewalk-displayed foodstuffs, must necessarily condemn such practices as reprehensible, filthy, and a menace to the health of the consumer.

Mention might also be made of the habit of certain town curs, in which sacks of flour, bunches of bananas and other fruits are made the target of attack.

I believe that merchants would gladly welcome the abolishment of such customs, but as long as one is permitted to do so the others will continue to do likewise; hence the necessity of ordinances and laws prohibiting such practices; but, better still, the absolute refusal of people to buy such goods would be more effective than laws.

The pure-food problem is not solved by the prohibition of preservatives, coloring matter, and dishonest labeling, if we continue to permit contamination of foods by retail dealers. Indeed, we would prefer to take our chances with the preservatives and other adulterations than with the fly and dust. This is another and near-by side of the pure-food problem.

The Quick Lunch.

The enjoyment of food is totally lost without thorough mastication. The fine sense of taste cannot be touched until sufficient saliva has been generated by the motion of the jaws to begin the work of transforming all the starch into grape-sugar, which is the first step toward assimilation. Hence, it is that foods which compel mastication are, as a rule, more healthful than soft, pappy foods which form so large a part of modern diet.

The author of "Perfect Foods" tells how he long ago dropped into a Fourteenth street, New York, cafe for a night lunch. "My attention was attracted to a gentleman, apparently in a great hurry, who, seated, devoured a cut of roast beef, two soggy potatoes, a glass of ice-water, three greasy doughnuts, a cup of hot coffee, and a slice of cold mince pie. Biff, bang, and the stuff was gone. While a large mouthful of meat was being cut in two by his teeth, a chunk of potato, upon which rested a pyramid of butter, was in its flight to his mouth. This morsel made no halt. One pump of his Adam's apple and it was gone. This was followed by a gulp of coffee, to heat him up; then another of ice-water, to cool him off. His arms worked like an automatic Punch and Judy fight; his back described a semicircle, so as to bring his mouth directly over his plate. This was to economize on distance from his plate to the hole in his face. He looked indigestion, liver complaint, and gout. He was tall, angular, and stoop-shouldered; complexion sallow, teeth bad, eyes muddy, expression sullen, with a convex abdomen and a concave chest. All this, no doubt, was the reward for his rush."

The most unfortunate thing about people is, that they never take anything unto themselves. The above case, taken from life, applies to millions of Americans; but, when they read this, they will in turn apply it to some one else. Most people in need of dietetic reform, when a change is prescribed, almost invariably say: "Now, my case is a little different. It is a very peculiar one. That kind of diet is all right for some people, but it won't do for me."

Nature has made hundreds of little wells under the tongue and in the throat out of which water is pumped by action of the jaws in mastication. Nature produces just enough of this saliva from these wells to dissolve and assimilate the food we eat. It is mad folly to dilute this natural water with beer, wine, or spring-water. This does not mean that a draft of water may not precede a meal, or that a few sips may not be taken during meal-time, but it does mean that food should not be washed down. Food should be chewed until swallowing is done involuntarily, and no artificial moisture should be introduced into the mouth while the food is there.

An eminent authority once said: "To insure complete mastication and involuntary swallowing, chew each morsel of food as if it were the last one left upon earth and as though the length of time you had to live after eating it depended entirely upon the number of chews made upon it."

Every molecule of food that is not tasted fails to perform the purpose for which it is eaten, fails to be registered in the brain, where the real sense of hunger is satisfied; but it does not fail to contribute its full share toward indigestion, impure blood, and disease.—*Journal Public Health.*

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"A laugh is worth a hundred groans, in any market."—*Charles Lamb.*

"The only man who never makes a mistake is the man who never does anything."—*Theodore Roosevelt.*

"The very flowers that bend and meet
In sweetening others grow more sweet."
—*Dr. O. W. Holmes.*

"Good health, I love thee, with thy smiling face,
Thy clear, bright eyes, thy buoyant, sapling grace,
Thy queenly step, thy glossy, wavy hair,
Thy mellow voice, thy manners debonair,
Thy velvet skin and cheeks like early day,
Thy priceless teeth and breath like new-made hay,
Thy spirit blithe and conversation spry,
Thy firm sweet will and candor in thine eye;
The sunshine which thou sheddest here and there
Makes life a joy and lessens worldly care."
—*Joseph A. Labadie, Detroit.*

Read Professor Sayre's report on drug analyses in this Bulletin.

VITAL STATISTICS

Reported to the Kansas Board of Health for June, 1906.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever		Smallpox.		Measles.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Allen	0	0	2	0	0	0	0	0	4	0	1	0
*Anderson												
Atchison	1	1	0	0	0	0	0	0	0	0	0	0
*Barber												
Barton	0	0	0	0	0	0	2	0	0	0	0	0
Bourbon	0	0	1	1	0	0	0	0	0	0	0	0
*Brown												
†Butler												
Chase	3	2	1	0	0	0	0	0	8	0	0	0
Chautauqua	0	0	0	0	0	0	0	0	1	0	0	0
Cherokee	2	2	0	0	0	0	0	0	0	0	0	0
†Cheyenne												
Clark	0	0	0	0	0	0	5	0	0	0	0	0
Clay	0	0	0	0	0	0	2	0	0	0	0	0
†Cloud												
Coffey	1	1	1	0	0	0	0	0	0	0	0	0
†Comanche												
Cowley	2	2	2	2	0	0	0	0	4	0	0	0
Crawford	1	0	0	0	1	0	0	0	0	0	3	0
Decatur	0	0	0	0	1	0	0	0	0	0	0	0
†Dickinson												
Doniphan	0	0	0	0	0	0	1	0	0	0	0	0
Douglas												
Edwards	0	0	0	0	0	0	8	0	0	0	0	0
Elk	0	0	0	0	0	0	0	0	9	0	0	0
†Ellis												
Ellsworth												
Finney	1	1	0	0	0	0	0	0	0	0	0	0
*Ford												
*Franklin												
Geary	2	2	2	0	0	0	0	0	0	0	0	0
†Gove												
Graham	1	1	0	0	0	0	0	0	0	0	0	0
‡Grant												
*Gray												
*Greeley												
†Greenwood												
†Hamilton												
Harper	1	1	0	0	0	0	0	0	4	0	3	0
Harvey	1	1	0	0	0	0	0	0	0	0	0	0
†Haskell												
†Hodgeman												
†Jackson												
Jefferson	0	0	0	0	4	0	0	0	0	0	0	0
Jewell	0	0	0	0	0	0	0	0	7	0	0	0
*Johnson												
*Kearny												
Kingman	0	0	0	0	0	0	0	0	0	0	8	0
†Kiowa												
Labette	1	1	0	0	0	0	0	0	0	0	0	0
†Lane												

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.	
	Cases. . . .	Deaths . . .	Cases. . . .	Deaths . . .	Cases. . . .	Deaths . . .	Cases. . . .	Deaths . . .	Cases. . . .	Deaths . . .	Cases. . . .	Deaths . . .
Leavenworth	0	0	0	0	1	0	0	0	0	0	0	0
†Lincoln												
Linn..	1	1	0	0	0	0	0	0	0	0	0	0
*Logan............												
Lyon...........	11	6	2	0	1	0	2	0	17	0	1	0
Marion..........	0	0	0	0	0	0	1	0	0	0	0	0
Marshall.........	3	8	0	0	0	0	0	0	0	0	0	0
*McPherson.......												
Meade............	1	1	1	0	0	0	0	0	0	0	0	0
†Miami..												
Mitchell..........	0	0	0	0	0	0	0	0	0	0	1	0
Montgomery	0	0	0	0	0	0	0	0	40	0	8	0
*Morris...........												
†Morton...........												
Nemaha	8	3	0	0	2	0	2	0	0	0	4	0
Neosho...........	0	0	0	0	1	0	0	0	0	0	8	0
†Ness												
Norton...........	1	0	1	0	0	0	0	0	0	0	0	0
Osage	1	1	0	0	0	0	0	0	0	0	0	0
Osborne..........	6	0	0	0	0	0	0	0	0	0	0	0
Ottawa	1	0	0	0	0	0	0	0	0	0	0	0
†Pawnee...........												
Phillips	0	0	3	0	0	0	0	0	0	0	0	0
Pottawatomie ...	8	0	0	0	0	0	0	0	0	0	0	0
Pratt...........	4	1	0	0	0	0	0	0	0	0	1	0
*Rawlins..........												
Republic...	0	0	0	0	0	0	1	0	0	0	0	0
Reno	0	0	0	0	0	0	1	0	17	0	0	0
*Rice.............												
Riley.	2	1	1	0	0	0	0	0	2	0	0	0
†Rooks												
*Rush.......												
†Russell.												
Saline............	0	0	0	0	1	1	0	0	2	0	0	0
†Scott.												
Sedgwick	0	0	2	0	1	0	4	0	15	0	12	0
†Seward												
Shawnee	2	0	0	0	0	0	0	0	0	0	0	0
†Sheridan.........												
Sherman.........	2	1	0	0	0	0	0	0	0	0	0	0
*Smith												
Stafford..........	1	0	1	0	0	0	0	0	3	0	0	0
‡Stanton												
†Stevens												
Sumner............	8	3	0	0	2	0	0	0	2	0	0	0
*Thomas												
*Trego												
Wabaunsee......	0	0	0	0	1	0	0	0	1	0	0	0
Wallace	2	0	0	0	0	0	0	0	0	0	0	0
Washington......	3	8	1	0	0	0	1	0	1	0	0	0
†Wichita												
Wilson	4	0	3	0	0	0	0	0	3	0	0	0
Woodson.........	1	0	0	0	0	0	0	0	6	0	0	0
Wyandotte......	0	0	0	0	0	0	0	0	1	0	0	0
Cities:												
*Atchison												
Kansas City....	20	6	34	3	8	2	0	0	1	0	15	0
Leavenworth ..	2	2	1	1	4	1	5	0	0	0	1	0
*Parsons												
Topeka	2	0	0	0	2	0	1	0	2	0	0	0
*Wichita												
State Institutions,	3	0	0	0	0	0	0	0	0	0	1	0
Totals.....	104	47	59	7	25	4	36	0	150	0	61	0
June, 1905.........	70	39	46	5	42	5	90	3	274	2	50	0

* No report. † No contagious diseases in county. ‡ No health officer.

ANALYSIS OF DRUGS.
No. I.

Since this department began the campaign for pure food, in September, 1905, it has been our desire to make some inquiries concerning the supposedly large adulteration of drugs, but not having any ways or means for the accomplishment of such purpose, it was thought that we would have to wait until the meeting of the next legislature.

It was finally concluded to ask the department of pharmacy of the State University if they would be willing to analyze such samples of drugs free of charge as might be sent to them by this Board. The reply to this letter by Professor Sayre, dean of the school of pharmacy, was a request for a personal conference. This was accordingly held, and arrangements made whereby the secretary was permitted to send in a list of sixteen different drugs purchased in duplicate from five different cities of the state. In accordance with this arrangement the list of sixteen was purchased in each of the cities of Lawrence, Olathe, Fort Scott, Topeka, and Kansas City. This department desires to express its appreciation to Professor Sayre for his willingness to cooperate with this Board in its work of uncovering frauds and adulterations.

The following admirable report from Professor Sayre should be read by every physician in the state:

ANALYSIS OF MEDICINAL SUBSTANCES.

LAWRENCE, KAN., June 7, 1906.

Dr. S. J. Crumbine, Secretary State Board of Health, Topeka:

DEAR DOCTOR—Permit me to present to your Board a report of the examination of medicinal substances obtained in different parts of the state, as suggested by yourself, in accord with the law regulating the adulteration of foods and medicines.

I should state, in the first place, that it has been the custom of this department for the last twenty years, ever since the school of pharmacy was created, to make a report on the conditions of the drug trade to the Kansas Pharmaceutical Association. These reports have contained analyses and have been printed in the proceedings of that organization.

During the year 1905 a considerable amount of work was done in this department in the examination of drugs, as will be indicated by the following figures: Thirteen samples of beeswax, nine samples of elm bark, eleven samples of glycerin, and various samples of miscellaneous drugs, such as salicylic acid, calcium hypophosphate, calomel, cochineal, gelsemium, powdered gentian, citrate of iron and quinine, soluble citrate of iron and quinine, powdered lobelia, lycopodium, potassium bitartrate, potassium iodide, hydrogen peroxide solution, precipitated sulfur, and powdered wild cherry bark. These were all carefully examined and reported upon. (See Proceedings Kansas Pharmaceutical Association, 1905, pp. 87–93.)

I present herewith a list of medicinal substances recently examined in the laboratories of the school of pharmacy, as follows:

	Samples.		Samples.
Acid, boric	1	Precipitated sulfur	7
Acid, hydrochloric	2	Quinine sulfate	5
Alcohol	7	Reduced iron	7
Ammonia water	3	Soap	4
Ammonium benzoate	1	Solution of formaldehyde	4
Bismuth subnitrate	2	Solution of hydrogen peroxide	3
Bismuth subcarbonate	2	Spirit of nitrous ether	14
Calomel	4	Spirit of nitrous ether, concent'd,	2
Cinchona bark	4	Syrup of iodide of iron	9
Mercurial ointment	9	Tincture of iodine	8
Pepsin, lactated	1	Tincture of opium (laudanum)	11
Potassium bitartrate	2	White wax	13
Potassium bromide	12	Yellow wax	3
Potassium iodide	1	Zinc	3

Results of chemical examination of above samples:

Pharmacy laboratory, No. 1238. Boric acid. Sample found to be pure.

Nos. 1239–1241. Hydrochloric acid. All contained traces of arsenic.

Nos. 1242–1248. Alcohol. These seven samples responded to the U. S. P. tests for purity, specific gravity ranging from 0.8158 to 0.8209. As the official specific gravity of alcohol is about 0.816, we consider these samples practically pure. No methyl alcohol present.

No. 1249. Ammonia water. One of these samples, labeled aqua ammonia, contained 27.2 per cent. gas; one, labeled ammonia, contained 5.08 per cent. gas; the other sample contained 6.8 per cent. It is evident from the above that the first-mentioned liquid was intended for the official stronger water of ammonia (containing 28 per cent. of gas). As the ordinary water of ammonia should contain 10 per cent. of gas, it is evident that all falling below that standard have been either very poorly kept or diluted with water.

No. 1252. Ammonium benzoate. The one sample of this article examined was found to be soluble in about 200 parts of water. The official salt should be soluble in 10.5 parts of water. It is evident that this substance had been very poorly kept, and was a very old sample, which, from exposure, lost ammonia, leaving behind the nearly insoluble benzoic acid.

Nos. 1377–1379. Bismuth subnitrate. While these samples gave merely traces of carbonate, they answered otherwise the U. S. P. test for strength and purity.

Nos. 1380, 1381. Bismuth subcarbonate. Both samples showed traces of alkali and alkaline earths; otherwise they responded to the U. S. P. test for strength and purity.

Nos. 1253–1255. Calomel. All responding to the U. S. P. tests for quality.

Nos. 1256–1259. Cinchona bark. The four samples tested assayed as follows: 4.58 per cent. total, 3.2 per cent. ether soluble alkaloids; 3.4 per cent. total, 2.6 per cent. ether soluble alkaloids; 2.3 per cent. total, 1.8 per cent. ether soluble alkaloids; 2.5 per cent. total, 1.9 per cent. ether soluble alkaloids. The U. S. P. requires 5 per cent. total alkaloids and 4 per cent. of ether soluble alkaloids.

Nos. 1260–1268. Mercurial ointment. In this group we obtain the following percentages of mercury: 42.6, 36.5, 53.9, 37.7, 49.3, 48 and 50.7 per cent. The U. S. P. standard is 50 per cent. of mercury.

No. 1269. Pepsin (lactated). This sample was sent by a physician of Oskaloosa. On examination, it was found to digest very little more than its own weight of coagulated albumen. The U. S. P. test requires that pepsin should digest a weight of albumen not less than 3000 times that of its own weight.

Nos. 1270, 1271. Potassium bitartrate. One sample, sold as "commercial," consisted of acid phosphate and sulphate of calcium, starch, etc. Sample 1271 was pure, answering to the U. S. P. test.

Nos. 1272–1283. Potassium bromide. Pharmacopœial test requires that this should contain not less than ninety-seven per cent. of the pure salt, and a quantitative test is given in which the decinormal silver-nitrate solution is used for complete precipitation of the bromide. The laboratory figures, using the U. S. P. method, show that while there is a variation of the percentage of bromide present, this slight variation did not indicate adulteration. One sample indicated the presence of a trace of organic matter which was very sensitive to color reagents.

No. 1284. Potassium iodide. One sample; contained excessive amounts of chlorides.

No. 1285–1292. Precipitated sulfur. Three of this group gave the following per cents. of impurities: 49.1, 49.5 and 47.2 per cent. The remaining ones were pure.

Nos. 1293–1297. Quinine sulfate. Two specimens were practically pure and three contained a slight excess of other cinchona alkaloids; but, summing up the results of the examination, these samples may be judged as comparatively pure and unadulterated.

Nos. 1298–1305. Reduced iron. The official test requires that not less than 90 per cent. of iron be present. Examined by the U. S. P. test, the percentages of iron found were as follows: 52.5, 92.4, 79.8, 92.6, 86.2, 80.0 and 92.4 per cent.

Nos. 1306–1310. Soap. Two samples of powdered soap, supplied on an order for Conti, contained animal fats. One sample of Conti bar, no animal fat; moisture, 14.6 per cent. One sample of Yaritu bar contained no animal fat; moisture, 4 per cent. Mazzini contained animal fat; moisture, 14.4 per cent. The pharmacopœial regulation is that no animal fat be present, and that the moisture should not exceed 36 per cent.

Nos. 1311–1314. Solution of formaldehyde. The pharmacopœia requires that this should contain 37 per cent. of formaldehyde. The following percentages were found: 37.6, 40.4, 40.2 and 40.1 per cent.

Nos. 1315–1319. Solution of hydrogen peroxide. All samples of standard quality.

Nos. 1320–1333. Spirit of nitrous ether. The pharmacopœia requires that this should yield not less than 4 per cent. of ethyl nitrite. The following percentages were found: 4.57, 2.37, 1.62, 0.14, 2.45, 3.68, 4.23, 1.59, 3.62, 2.68, 1.23, 1.91 and 1.24 per cent. One sample, not sold from a drug-store but from a department store, so reported from a member of the State Pharmaceutical Association, yielded only 0.05 per cent.

Nos. 1334, 1335. Concentrated nitrous ether. Supposed to yield a spirit of nitrous ether; when diluted with the official quantity of alcohol, 4 per cent. of ethyl nitrite. One sample yielded 3 per cent. and another 3.63 per cent. when so diluted.

Nos. 1336, 1344. Syrup of ferrous iodide. The pharmacopœia requires that 5 per cent. of ferrous iodide be present. Of the various specimens examined, only one very materially fell below the official standard; it contained three per cent. of ferrous iodide.

Nos. 1345, 1348. Tincture of iodine. The pharmacopœia requires for this tincture 6.86 grams of iodine in 100 c. c. Two samples contained a trifle over this amount. One sample lacked nearly 1 per cent. of containing the required amount of iodine.

Nos. 1349–1357. Tincture of opium. The pharmacopœia requires that in 100 c. c. of this tincture there should be contained from 1.2 to 1.25 grams of crystallized morphine. The weights of crystallized morphine in 100 c. c. obtained by us from the various samples was as follows: 1.31, 1.16, 1.41, 0.82, 0.90, 1.06, 1.32, 1.53 and 1.24 grams.

Nos. 1358–1370. White wax. The pharmacopœia requires that the melting-point shall be 64 to 65 degrees Centigrade. The melting-points of the samples examined were as follows: 51.5, 61.5, 60.8, 61.8, 48.3, 61.3, 68.7, 62.0, 60.3, 53.3, 61.4, 61.4 and 61.3 degrees.

Nos. 1371–1373. Yellow wax. The pharmacopœia requires that this shall melt between 62 and 64 degrees Centigrade. The melting-points of the samples examined were 49.3, 63.5 and 63.8 degrees.

Nos. 1374–1376. Zinc. All samples found to be free from arsenic and other metals.

Permit me to call attention to the fact that many of the articles examined were collected with the idea that there was suspicion of adulteration resting upon them, and in many instances this was the incentive that lead to their examination. This report certainly does not indicate wholesale adulteration of medicinal agents in the West, which is very gratifying. It is to be hoped that in the near future this department of the University will be equipped with laboratory facilities and help, so that more systematic analytical work may be carried on of this character in the interest of the public. It would be of much assistance to the conscientious pharmacist and to the honest manufacturer.

If the pharmacopœia is to serve in its legal capacity as a guard and protection, it seems that it is now time that our state should take steps to make this service complete and effective. A system of publicity, showing the character of the remedial agents coming into the state, is the first thing, in our opinion, that should be accomplished. This should be followed by legislation whereby the offender may be punished when his wares do not prove to be as represented, or when he deliberately ignores the standards fixed by the United States Pharmacopœia.

To this report we should add an analysis of a remedial agent sent us by the secretary of the State Board of Health. It was labeled "Vesitone," for a certain cure of kidney and bladder weaknesses, etc., and was manufactured by the Union Medical Company, Edwardsburg, Mich. The question asked by the secretary regarding this was: Does the article contain poisonous ingredients? Our examination shows that the tablets contain about one-twelfth of a grain of alkaloidal material in each tablet, of which a fair proportion was strychnine.

We wish to acknowledge the valuable assistance of Mr. L. D. Havenhill, and of senior students, who were specially trained in this line of investigation, working under our supervision.

Respectfully submitted. L. E. Sayre.

Inspection of Slaughter-houses.

A recent inspection of a country slaughter-house has disclosed a most revolting and unsanitary condition. There was no evidence to indicate that the slaughter-house was cleaned after animals were butchered, or ever had been. The offal was allowed to accumulate and decompose underneath and around the building, and carcasses of cattle dying in stock-yards were hauled to the enclosure surrounding the building and fed to the hogs contained therein, and flies and insects swarmed in innumerable numbers at will and pleasure, inside and outside.

This investigation has suggested the necessity of an inspection of all slaughter-houses in the state, and county health officers are hereby ordered to make an investigation of each and every slaughter-house, and where found unsanitary, and not complying with rule 9 as laid down in the Board's rules, and to which your attention is directed, you should immediately take such steps as seem necessary in each individual case.

Your attention is also called to section 2352 of the General Statutes of 1901, which law provides that slaughter-houses shall be kept clean, and imposes a fine and penalty for violation of such act. It is suggested that slaughter-houses be inspected at least semiannually, preferably, of course, during the hot season. Windows and doors should be screened to keep flies off the butchered products until they can be removed to the refrigerators. The consumer is not only interested in having the meat uncontaminated, but clean and screened slaughter-houses would be a distinct advantage to the proprietors themselves in preventing tainted and decomposed meat, and loss resulting thereby. It is hoped that county health officers will immediately take up this inspection.

Pure-food Rules.

At the annual meeting of the State Board of Health held June 21, 1906, the following rules were unanimously adopted, to go into force and effect on and after their publication in the official publication of the Board, the Bulletin of the State Board of Health:

1. The use of artificial coloring matter in meat products is prohibited, and all other food products and beverages must be free from coal-tar dye, or other injurious dyes.

2. The use of chemical preservatives, such as formaldehyde, benzoic acid, sulfurous acid, boracic acid, salicylic acid, hydrofluoric acid, saccharin, beta-naphthol, or any salt or antiseptic compound derived from these products, is prohibited in food and drink products, except as hereinafter provided.

3. The use of benzoate of soda is permitted in perishable goods in quantities not greater than one-half of one per cent., provided such product is distinctly labeled, setting forth the kind and amount of preservative so used. The use of boric acid, or its boron equivalents, is permitted in compound meat products in amounts not to exceed one-half of one per cent., provided that such product be properly labeled or tagged as containing such preservative, and the amount so contained stated. The use of salicylic acid is permitted in perishable products in amounts not to exceed one-half of one per cent., provided such product be properly labeled or tagged, stating the kind of preservative and the amount used. Such tag or label must be on every package, box, can, carton, glass, and bottle.

4. All food and drink products must be labeled true to name in every respect.

5. Every package, bottle or carton must bear the true net weight.

6. Every package, bottle or carton must show the true grade of class of the goods.

7. Mixed or compound food products must be properly labeled as such.

8. All statements on labels as to the product must be on body of container and in legible type.

9. Vinegar must be sold under true names. Cider vinegar must be made wholly from apples.

10. Coffees must be pure, free from chicory, and not extracted.

11. Extracts must be pure and what they claim to be.

12. Candies must not contain coal-tar dyes, or harmful or inert products, such as terra alba, barytes, talc, etc.

13. Sausages must not contain tainted or decomposed meat, and must not contain prohibited preservatives, artificial coloring mat-

ter, or starch fillers; provided, starch fillers may be used if label states their presence and the amount of starch used, expressed in parts or per cent.

14. Spices must be labeled as to their exact composition.

15. Milk, cream and butter must measure up to the standard of requirements adopted by the United States Department of Agriculture and be free from preservatives.

16. All fruit products must be distinctly labeled as to their composition, and be free from prohibited preservatives and coal-tar dyes.

17. If adulterated foods and drinks injurious to the health are offered for sale, they are subject to confiscation and destruction, and the person or persons so fraudulently adulterating such foods are subject to imprisonment and fine.

18. All other mixtures, compounds, powders or products used as foods or drinks must be accurately labeled as to their composition, and state the kind and amount of preservative used, if any is used.

19. The standards of purity, quality and strength adopted by this Board are those adopted by the U. S. Department of Agriculture.

20. Any citizen may have foods analyzed at the laboratories of the State University, at Lawrence, or the State Agricultural College, at Manhattan, if the same is sent through his local or the State Board of Health.

21. Four times each year county boards of health must publish, in the official county paper, a list of all adulterated foods and drinks injurious to the health of those consuming them, as found in the official publication, the Bulletin of the Kansas State Board of Health.

These rules were submitted to the attorney-general for his opinion as to their legality, and if, when violated, they could be enforced by the courts. The attorney-general's opinion is rendered in the following letter:

TOPEKA, June 29, 1906.

Dr. S. J. Crumbine, Secretary State Board of Health:

DEAR SIR—I have your letter of June 28, enclosing rules which are proposed to be adopted by the State Board of Health. I have given this matter some consideration, and have compared carefully each of the proposed rules in connection with the sections of the statute upon which you state you have founded them. I agree with you in every particular as to the powers of the Board and its duty in the premises. I find the rules are each and all authorized by law. I think this move on the part of the Board is fully warranted by the circumstances now existing in the state, and that you will have no trouble in enforcing the rules promulgated under the provisions of the law as it now exists. Yours truly,

C. C. COLEMAN, *Attorney-general.*

County and municipal health officers should see that these rules are enforced within their jurisdiction. Particular attention is called to the practice of some local butchers in using various kinds of preservatives, such as "freezum" and "preservaline," in their meat products. This must be prohibited and the strict letter of the law complied with in every respect. It is also suggested that these rules be published in full in the official county paper of each county.

Sanitation of Railway-coaches and Pullman Cars.

The subject of car sanitation continues to receive increasing attention, both from sanitarians and from transportation officials. The education of the traveling public in the necessity of observing hygienic precautions for their own and others' benefit is the most important factor in securing improved conditions in the sanitary arrangement of railway-coaches, Pullman cars, etc.

The bureau sanitary board was convened in April, 1905, by order of the surgeon-general, to consider some of the more important phases of car sanitation.

A copy of the surgeon-general's order and a copy of the report of the board are given below:

TREASURY DEPARTMENT, WASHINGTON, April 12, 1905.

SIR—You are directed to convene a meeting of the bureau sanitary board at the earliest possible time to consider the following questions in connection with car sanitation:

(*a*) The bedding and bedclothing of sleeping-cars.

(*b*) The drinking utensils upon railway-coaches, especially sleeping-cars.

(*c*) The toilet arrangements and closets of railway-coaches, especially provision of a separate receptacle in the toilet-room to be used for the purpose of tooth washing, mouth rinsing, etc.

The board is directed to consider these questions from a sanitary point of view and to submit recommendations looking to their betterment.

Additional questions in regard to the sanitation of passenger and sleeping coaches will be submitted in the near future to the board, and will form the subject of a separate communication.

The board is directed to thoroughly canvass these problems, and to submit a report with their recommendations at the earliest possible date.

Respectfully, WALTER WYMAN, *Surgeon-general.*

Assistant Surgeon-gen. A. H. GLENNAN,
Public Health and Marine Hospital Service, Washington, D. C.

PUBLIC HEALTH AND MARINE HOSPITAL SERVICE,
WASHINGTON, April 19, 1905.

SIR: Obedient to your orders of April 12, several meetings of the sanitary board were held to discuss questions in connection with car sanitation. The board has the honor to submit the following recommendations looking to the betterment of the sanitary conditions of the railway-coach.

It is recommended that the blankets used in sleeping-cars be covered with a fabric that may be removed and washed. It is believed that this may be accomplished satisfactorily by enclosing the blanket with a linen sheet large enough to fold under all its sides.

There is no doubt of the danger of communicating disease by the use of a common drinking-cup. The board seriously questions whether it should be the duty of each traveler to carry his own cup, as he does has own toothbrush, etc. When the general public is alive to the danger from this scourge, it will demand separate cups, as it now demands separate towels. The board has been informed that paraffin paper cups may be made very cheaply, at a cost of about one-tenth of a cent each, which may be nested together and occupy a small space. It is also understood that these cups may be supplied in slot-machines. More detailed information upon this subject is being obtained by the recorder.

We urgently recommend the provision of separate receptacles in the toilet-rooms for the purpose of tooth cleaning, mouth rinsing, etc. This may be satisfactorily accomplished by a separate sink, funnel-shaped, with an appropriate sign indicating its use.

The board has carefully considered the sanitary condition of the water-closets in the railway-coach, and recommends that the railway companies be requested to consider improvements in several directions. For the present, the unloading of the urinary and fecal discharges upon the track appears to be an unavoidable evil. The danger of this practice, however, is to be kept in mind. A practical method of disinfecting discharges was discussed, and the advisability of adding formalin in weak proportions to the water in the flush-tank, or the use of an automatic arrangement which would release a few drops of formalin into the hopper each time the lid is raised, was carefully considered.

The board questions whether the administration of matters affecting the health of the occupants of the railway-coach can succeed if the measures employed are a marked advance upon the personal habits of travelers. Success must sometimes wait upon the education of the people, and it is believed that the Pullman car or the day coach is not the best schoolroom in which to teach personal hygiene and the prevention of the communicable diseases.

The orders convening the board are herewith returned.

All of which is respectfully submitted.

A. H. GLENNAN, *Chairman.*
W. J. PETTUS,
GEORGE T. VAUGHAN, *Asst. Surg.-gen.*
H. D. GEDDINGS.
M. J. ROSENAU, *Recorder.*

The efforts of Dr. R. G. Eccles, of Brooklyn, N. Y., to induce the public to believe that borax, boric acid, benzoate of soda, salicylic acid and like chemical preservatives are beneficial articles of food will probably cease now that Congress has passed a pure-food law. The strenuous work which Doctor Eccles has done in this direction has certainly entitled him to big compensation from the food manufacturers who persist in using chemical preservatives. That his efforts have been for their purposes is evident from the way in which his writings have been publicly and extensively distributed.—*New Hampshire Sanitary Bulletin.*

Special Notice to County and Municipal Health Officers.

The order made last year for the fumigation of all schoolhouses at some time during the vacation period was only partially observed. In the epidemic of diphtheria, which was quite prevalent throughout the state in the late fall and early winter of the past year, it was noticeable that in those counties where the order had been observed and the schoolhouses effectively fumigated there was very little, if any, diphtheria. I am convinced that it was effective in many instances in the prevention of much sickness and the saving of life. It is therefore ordered that county health officers take immediate action towards thorough and effective fumigation of all schoolrooms within their county at some time during the summer, before the fall term of school begins. An early meeting with your board of county commissioners and the superintendent of public instruction should be held, to make such plans and arrangements as will be necessary to carry this order into effect.

Another Tragedy Charged to the Great American Fraud.

Several weeks ago a tragedy occurred near Ellinwood, in Barton county, which emphasizes the necessity of a curb upon the "great American fraud." A letter from a physician in Ellinwood gives the pathetic facts in the case:

"Louise Closen, aged sixteen months, while playing, secured a bottle containing tablets called 'Vesitone,' which an older member of the family was taking for bed-wetting. Her father does not know how many tablets were taken by the baby, but thinks less than ten. Ten minutes after taking the medicine the child became rigid in every muscle. The father gave it three-quarters of a teaspoonful of Winslow's Soothing Syrup. Two or three minutes later the father attempted to induce vomiting by giving salt water and mustard, but did not succeed. The child was apparently unconscious from fifteen minutes after taking the tablets. A slight tremor was present during the whole time. Ten minutes before dying the spasm relaxed somewhat. Child died forty-eight minutes after taking the medicine."

The vesitone was sent to Professor Sayre, of the State University, for analysis, which is herewith submitted for the information of the public:

"The report of analysis of a remedial agent sent us by the secretary of the State Board of Health, which was labeled as follows: 'Vesitone, for a Certain Cure of Kidney and Bladder Weakness, etc.; manufactured by the Union Medical Company, Edwardsburg, Mich.' The question by the secretary regarding this was, 'Does the medicine contain poisonous ingredients?' Our examination shows that the tablets contain about one-twelfth grain of alkaloidal material in each tablet, of which a fair proportion was strychnine."

The following is taken from the wrapper which sets forth the remarkable virtues of this nostrum:

"It is a combination of simple and harmless vegetable or herbal remedies that affects in a most wonderful manner the changes desired. Its action is directed so singly and directly to the affected organs that the cure is swiftly and surely accomplished without any shock whatever to the intricate organism of the most delicate child. It achieves its most marvelous results from the fact that it repairs and builds up the affected parts and organs in precisely the same order that they were weakened and broken down by the disease. The ingredients are so carefully chosen and so scientifically blended that there is absolutely no superfluous action, no organ is unnecessarily affected, and there is no irritation whatever from its use. In other words, it acts like a perfect antidote to the disease."

This statement, no doubt, was the occasion of the carelessness on the part of the parents in placing the remedy where the child might get it to play with. If this had been properly labeled, as containing a dangerous alkaloid, the parents would probably have exercised all necessary precaution to place it beyond the reach of the little one.

The coming legislature should enact a law compelling the manufacturers of all proprietary nostrums containing poisonous drugs to have the same distinctly set forth on the label, in order that people may be advised what they are taking. The cooperation of the physicians of the state is urgently requested in putting through a measure of that kind.

How Not to Live.

By the Doctor.

Fully three-fourths of the people who come under my care for treatment are personally responsible for their illness. They have lived too fast. Men attempt to acquire fortunes in a few years which should require a lifetime of honest business methods to accumulate. They "burn the candle at both ends." After working like slaves during the day, they spend the good part of the night in drinking, smoking, and dining.

Women, in their efforts to comply with the demands of society, overtax their nervous system, and resort to stimulants, narcotics, or hypnotics.

Our mode of life is all wrong. We are in one great procession of hustling, restless men and women, who are rushing rapidly towards confirmed invalidism or premature death. A well-known artist thus speaks of the hustle and push of the nineteenth-century life: "Man's business requires haste. The average business man and professional man eats in a hurry, and gets dyspepsia. He walks in a hurry, and gets apoplexy. He talks in a hurry, and gets the lie He does business in a hurry, and becomes a bankrupt. He votes in a hurry, and produces corruption. He marries in a hurry, and gets a divorce. He trains his children in a hurry, and develops spendthrifts and criminals. He gets religion in a hurry, and forgets it in a hurry. He makes his will in a hurry, and leaves a legal contest. He dies in a hurry, and goes to the devil. And his tribe steadily increases."—*Journal Public Health.*

Deaths of Italians.

The following letter from the Department of State, at Washington, has been received by Governor Hoch and referred to this department:

"WASHINGTON, D. C., May 26, 1906.

"*His Excellency the Governor of Kansas, Topeka:*

SIR—Referring to the department's circular letter of July 14, 1893, I have the honor to call your attention to the fact that article XVI of the consular convention of May 8, 1878, between the United States and Italy (copy of which is appended) provides that in the case of the death of an American citizen in Italy or of an Italian subject in the United States who has no known heir or testamentary executor designated by him, the competent local authorities shall give notice of the fact to the consuls or consular agents of the nation of the deceased, in order that the information may be at once transmitted to the parties interested.

"The government of Italy alleges that the local authorities of the states of this Union fail in many instances to comply with the stipulations of this article, under which it becomes their duty to notify an Italian consular officer of the death of any Italian subject without known heirs or testamentary executors designated by him which may occur within their jurisdiction.

"I have the honor to ask that you will kindly bring the provisions of the article in question to the attention of the competent local authorities in your state, in order that its stipulations may be complied with.

"A list of the Italian consular officers in the United States is also appended.

"I have the honor to be, sir, your obedient servant,

ELIHU ROOT."

County and municipal health officers are advised to report all such deaths as indicated in the above letter, immediately and directly to the State Board of Health, or to the nearest Italian consular officer, which, for Kansas, would be Pasquale Corte, Denver, Colo.

BULLETIN
OF THE
Kansas State Board of Health.

Published Monthly at the Office of the Secretary of the Board, Topeka, Kan.

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SARA E. GREENFIELD, M. D., Bacteriologist, Topeka.
W. J. V. DEACON, Statistician, Topeka.

No. 8. AUGUST, 1906. VOL. 2.

Do it now.

Do it better.

The campaign against tuberculosis is now on. Read the plans and scope of the work, on another page.

"Let none falter who thinks he is right."—*Abraham Lincoln.*

"Wish not so much to live long as to live well."—*Benjamin Franklin.*

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Standards of Quality, Strength and Purity of Foods, page 188.
National Pure-food Law, page 197.
Kansas Campaign against Tuberculosis, page 204.
Pyrofume, page 206.
Cleanliness Should be Taught in Schools, page 208.
Transmission of Typhoid Fever, page 210.
Honest Labeling of Food Materials, page 213.
Mosquito Brief, page 215.
Contagiousness of Desquamating Epithelium, page 216.

VITAL STATISTICS

Reported to the Kansas Board of Health for July, 1906.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.	
	Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...	Cases....	Deaths...
Allen	0	0	15	2	0	0	2	0	4	0	0	0
*Anderson												
Atchison	1	1	1	0	0	0	0	0	0	0	1	0
*Barber												
Barton	0	0	5	0	0	0	2	0	1	0	0	0
Bourbon	1	1	0	0	0	0	0	0	0	0	0	0
Brown	1	1	1	0	0	0	0	0	0	0	0	0
Butler	0	0	0	0	0	0	0	0	2	0	0	0
Chase	2	1	1	0	0	0	0	0	3	0	2	0
†Chautauqua												
Cherokee	2	2	0	0	0	0	0	0	0	0	0	0
†Cheyenne												
†Clark												
Clay	0	0	0	0	1	1	1	0	0	0	0	0
†Cloud												
Coffey	2	2	2	0	0	0	0	0	0	0	0	0
†Comanche												
Cowley	1	1	1	1	0	0	0	0	0	0	0	0
Crawford	1	1	0	0	0	0	0	0	0	0	0	0
Decatur	0	0	0	0	0	0	1	0	0	0	0	0
Dickinson	0	1	0	0	0	0	0	0	0	0	0	0
Doniphan	1	1	0	0	0	0	0	0	5	0	0	0
Douglas	3	3	10	0	4	0	0	0	0	0	0	0
†Edwards												
Elk	0	0	0	0	0	0	0	0	14	0	0	0
†Ellis												
*Ellsworth												
Finney	1	1	0	0	0	0	0	0	0	0	0	0
*Ford												
Franklin	0	0	0	0	0	0	0	0	0	0	0	0
*Geary												
Gove	1	0	2	0	0	0	0	0	1	0	0	0
†Graham												
‡Grant												
*Gray												
*Greeley												
Greenwood	1	1	0	0	1	1	0	0	1	0	0	0
Hamilton												
Harper	1	1	0	0	0	0	0	0	0	0	0	0
Harvey	1	1	0	0	0	0	0	0	2	0	0	0
Haskell	0	0	1	1	0	0	0	0	0	0	0	0
†Hodgeman												
Jackson	0	0	0	0	0	0	3	0	0	0	0	0
†Jefferson												
*Jewell												
†Johnson												
Kearny	0	0	6	0	0	0	0	0	0	0	0	0
Kingman	1	1	0	0	4	0	0	0	0	0	0	0
Kiowa	0	0	0	0	0	0	0	0	2	0	0	0
Labette	1	0	1	1	0	0	0	0	0	0	1	1
†Lane												

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.	
	Cases....	Deaths...	Cases....	Deaths...	Cases. ..	Deaths...	Cases. ..	Deaths...	Cases....	Deaths...	Cases....	Deaths...
Leavenworth	0	0	0	0	0	0	1	0	0	0	0	0
†Lincoln												
†Linn.............												
†Logan............												
Lyon	0	0	0	0	0	0	2	0	0	0	0	0
Marion...........	1	0	1	0	0	0	2	0	0	0	0	0
†Marshall.												
McPherson.......	0	0	6	0	0	0	8	0	0	0	0	0
Meade...........	0	0	1	1	0	0	0	0	0	0	0	0
Miami...........	1	1	0	0	0	0	0	0	0	0	0	0
†Mitchell..........												
Montgomery	0	0	0	0	0	0	0	0	20	0	0	0
*Morris...........												
†Morton...........												
Nemaha	3	3	0	0	0	0	3	1	0	0	0	0
*Neosho...........												
Ness.............	0	0	0	0	0	0	0	0	3	0	0	0
Norton...........	0	0	1	0	0	0	0	0	0	0	0	0
Osage	2	0	1	0	0	0	0	0	0	0	0	0
Osborne..........	6	0	1	0	0	0	0	0	0	0	0	0
Ottawa	0	0	1	1	0	0	0	0	0	0	0	0
†Pawnee...........												
Phillips..........	1	1	1	1	0	0	0	0	0	0	0	0
Pottawatomie...	1	0	1	0	0	0	0	0	0	0	0	0
Pratt............	4	0	5	2	0	0	0	0	0	0	0	0
Rawlins..........	0	0	0	0	0	0	6	0	0	0	0	0
†Republic.........												
Reno	0	0	0	0	0	0	0	0	4	0	0	0
Rice.............	6	2	3	1	0	0	0	0	6	0	0	0
Riley	2	0	6	0	0	0	0	0	2	0	1	0
Rooks	0	0	0	0	0	0	1	0	0	0	0	0
Rush	4	1	0	0	0	0	0	0	0	0	0	0
Russell..........	0	0	1	0	0	0	1	0	0	0	0	0
Saline............	2	2	0	0	0	0	1	0	1	0	0	0
†Scott............												
Sedgwick	4	3	3	2	1	0	0	0	8	0	0	0
Seward	0	0	0	0	0	0	0	0	1	0	0	0
Shawnee	2	1	0	0	0	0	0	0	0	0	0	0
Sheridan.........	0	0	0	0	0	0	2	0	0	0	0	0
Sherman	0	0	1	0	0	0	0	0	0	0	0	0
Smith												
Stafford..........	1	1	4	0	0	0	0	0	3	0	0	0
‡Stanton												
†Stevens												
Sumner...........	3	1	1	0	1	0	6	0	2	0	2	0
*Thomas												
*Trego												
†Wabaunsee.......												
Wallace..........	2	0	0	0	0	0	0	0	0	0	0	0
Washington......	3	3	1	0	0	0	0	0	0	0	0	0
Wichita..........	2	0	3	0	0	0	0	0	0	0	0	0
Wilson...........	8	1	10	3	0	0	0	0	1	0	0	0
Woodson.........	0	0	1	0	0	0	0	0	0	0	0	0
Wyandotte.......	0	0	0	0	0	0	1	0	0	0	0	0
Cities:												
†Atchison												
Fort Scott (incl	uded	in Bo	urbo	n cou	nty.							
Kansas City....	30	20	25	2	1	0	0	0	1	0	30	0
Leavenworth..	3	3	1	1	4	0	1	1	0	0	1	0
Parsons												
Topeka	0	0	1	0	2	0	0	0	0	0	0	0
*Wichita												
State Institutions,	8	2	0	0	0	0	0	0	0	0	0	0
Totals.....	115	65	126	19	19	2	43	2	87	0	38	1
July, 1905..........	123	54	165	16	42	3	57	1	169	4	15	0

* No report. † No contagious diseases in county. ‡ No health officer.

FOOD DEFINITIONS AND STANDARDS.

UNITED STATES DEPARTMENT OF AGRICULTURE, Bureau of Chemistry. (Prepared by the Committee on Food Standards, Association of Official Agricultural Chemists, subject to revision.)

I.—ANIMAL PRODUCTS.

A.—Meats and the Principal Meat Products.

A. MEATS.

Definitions: (1) Meat is any sound, dressed and properly prepared edible part of animals in good health at the time of slaughter. The term "animals," as herein used, includes not only mammals, but fish, fowl, mollusks, and all other animals used as food.

(2) Fresh meat is meat from animals recently slaughtered or preserved only by refrigeration.

(3) Salted, pickled and smoked meats are unmixed meats preserved by salt, sugar, vinegar, spices, or smoke, singly or in combination, whether in bulk or in packages.

Standard: Standard meat, fresh meat, and salted, pickled and smoked meats are such as conform, respectively, to the foregoing definitions.

B. MANUFACTURED MEATS.

Definition: (1) Manufactured meats are meats not included in definitions 2 and 3, whether simple or mixed, whole or comminuted, in bulk or packages, with or without the addition of salt, sugar, vinegar, spices, smoke, oils, or rendered fat.

Standard manufactured meats conform to the foregoing definition. If they bear names descriptive of composition they correspond thereto; if force or flavoring meats are used, the quantity thereof is made known. If substances other than those named in the definition are present, the character and quantity thereof are made known.

C. MEAT EXTRACTS, MEAT PEPTONES, ETC.

(Schedule in preparation.)

D. LARD.

Definitions: (1) Lard is the rendered fresh fat from slaughtered, healthy hogs.

(2) Leaf lard is the lard rendered in open kettles at moderately high temperatures from the internal fat of the abdomen of the hog, excluding that adherent to the intestines.

Standard lard and *standard leaf lard* are lards containing not more than one per cent. of substances not fat, necessarily incorporated therewith in the process of rendering.

(3) Neutral lard is the lard rendered at low temperatures from the internal fat of the abdomen of the hog.

B. Milk and its Products.

A. MILKS.

Definitions: (1) Milk (whole milk) is the lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within fifteen days before and five days after calving.

Standard milk is milk containing not less than 3.25 per cent. of milk-fat and 8.25 per cent. of solids not fat, and which has an acidity equivalent to not more than 0.2 per cent. of lactic acid.

(2) Blended milk is milk modified in its composition so as to have a definite and stated percentage of one or more of its constituents.

(3) Skim-milk is milk from which a part or all of the cream has been removed.

(4) Buttermilk is the product that remains when butter is removed from milk or cream in the process of churning.

(5) Pasteurized milk is milk that has been heated sufficiently to kill most of the active organisms present, and to retard the development of their spores, without changing the taste or flavor of the milk.

(6) Sterilized milk is milk that has been heated at the temperature of boiling water or higher for a length of time sufficient to kill all organisms present.

(7) Condensed milk is milk from which a considerable portion of water has been evaporated, with or without the addition of sugar (sucrose).

Standard condensed milk is condensed milk containing at least 36 per cent. of milk solids, of which not less than one-fourth is milk-fat, and not more than 50 per cent. of the total solids is added sugar (sucrose).

B. MILK-FAT OR BUTTER-FAT.

Definition: (1) Milk-fat or butter-fat is the fat of milk.

Standard milk-fat or *butter-fat* has a Reichert-Meissl number not less than 24 and a specific gravity not less than 0.905 (40 C.)

C. CREAM.

Definition: (1) Cream is that portion of milk, rich in butter-fat, which rises to the surface of milk on standing, or is separated from it by centrifugal force.

Standard cream is cream containing not less than 18 per cent. of milk-fat.

D. BUTTER.

Definition: (1) Butter is the product obtained by gathering in any manner the fat of fresh or ripened milk or cream into a mass, which also contains a small portion of the other milk constituents, with or without salt.

Standard butter is butter containing not less than 82.5 per cent. of butter-fat.

(2) Renovated or process butter is the product obtained by melting butter and reworking, without the addition or use of chemicals or any substances except milk, cream, or salt.

Standard renovated or *process butter* is renovated or process butter containing not more than 16 per cent. of water and at least 82.5 per cent. of butter-fat.

E. CHEESE.

Definitions: (1) Cheese is the solid product obtained by coagulating the casein of milk by means of rennet or acids, with or without the addition of ripening ferments and seasoning.

(2) Whole-milk or full-cream cheese is cheese made from milk from which no portion of the fat has been removed.

(3) Skim-milk cheese is cheese made from milk from which any portion of the fat has been removed.

(4) Cream-cheese is cheese made from whole milk to which cream has been added.

Standard whole-milk cheese, full-cream cheese or cream cheese is cheese containing, in the water-free substance, not less than 48 per cent. of butter-fat.

F. MISCELLANEOUS MILK PRODUCTS.

Definitions: (1) Ice-cream is a product made from cream or milk and cream, with or without eggs, fruits, nuts, and harmless flavoring and coloring matters, sweetened with sugar (sucrose) and frozen into a mass of fine, granular texture.

Standard ice-cream is ice-cream containing not less than 6 per cent. of milk-fat.

(2) Whey is the product remaining after the removal of fat and casein from milk in the process of cheese-making.

(3) Kumiss is mare's or cow's milk, with or without the addition of sugar (sucrose), which has undergone alcoholic fermentation.

II. VEGETABLE PRODUCTS.

A. Grain Products. (Schedule in preparation.)

B. Fruits and Vegetables. (Schedule in preparation.)

C. Sugars and Related Substances.

A. SUGAR AND SUGAR PRODUCTS.

Definitions: (1) Sugar is the product chemically known as sucrose (saccharose), chiefly obtained from sugar-cane, sugar-beets, sorghum, maple, or palm.

Standard sugar is white sugar containing at least 99.5 per cent. of sucrose and without any added substance.

(2) Granulated, loaf, cut, milled and powdered sugars are different forms of standard sugar.

(3) Maple sugar is the solid product resulting from the evaporation of maple sap.

(4) Massecuite, melada, mush sugar and concrete are products obtained by evaporating the purified juice of a sugar-producing plant, or a solution of sugar, to a solid or semisolid consistence in which sugar chiefly exists in a crystalline state.

(5) Molasses is the product left after separating the sugar from massecuite, melada, mush sugar, or concrete.

Standard syrup is a syrup containing not more than 30 per cent. of water nor more than 2.5 per cent. of ash.

C. GLUCOSE PRODUCTS.

Definitions: (1) Starch-sugar or grape-sugar is the solid product obtained by hydrolyzing starch or a starch-containing substance until the greater part of the starch is converted into dextrose. Starch-sugar or grape-sugar appears in commerce in two forms, anhydrous and hydrous. In the former the sugar is crystallized without water of crystallization; in the latter it is crystallized with water of crystallization. The hydrous varieties are commonly known as "70" and "80" sugars; 70 sugar is also known as "brewers'" sugar, and 80 sugar as "climax" or "acme" sugar.

Standard 70 sugar (or brewers' sugar) is hydrous starch-sugar containing not less than 70 per cent. of dextrose and not more than 0.6 per cent. of ash.

Standard 80 sugar (climax or acme sugar) is hydrous starch-sugar containing not less than 80 per cent. of dextrose and not more than 1.5 per cent. of ash.

Standard anhydrous grape-sugar is anhydrous grape-sugar containing not less than 96 per cent. of dextrose without water of crystallization and not more than 0.6 per cent. of ash.

The ash of these standard products consists almost entirely of chlorids and sulfates of lime or soda. The standard products are free from deleterious substances.

(2) Glucose, mixers' glucose, confectioners' glucose, or corn syrup is a thick, syrupy substance obtained by incompletely hydrolizing starch or a starch-containing substance, decolorizing and evaporating the product. It is found in various degrees of concentration, ranging from 41° to 45° Baume.

Standard glucose, mixers' glucose, confectioners' glucose, or corn syrup is colorless glucose, varying in density between 41° and 45° Baume, at a temperature of 100° F. (37.7° C.) It conforms in density, within these limits, to the degree Baume it is claimed to show, and for a density of 41° Baume contains not more than 21 per cent. of water, and for a density of 45° not more than 14 per cent. It contains not more than 1 per cent. of ash, consisting chiefly of chlorids and sulfates of lime or soda.

D. CANDY.

Definition: (1) Candy is a product prepared from a saccharine substance or substances, with or without the addition of harmless coloring, flavoring, or filling materials.

Standard candy is candy containing no terra alba, barytes, talc, chrome yellow, or other mineral substances or poisonous colors, or flavors, or other ingredients injurious to health.

E. HONEY.

(Schedule in preparation.)

D. Condiments (except Vinegar).

A. SPICES.

General definition: (1) Spices are aromatic vegetable substances used for the seasoning of food.

Standard spices are sound spices, true to name, from which no portion of any volatile oil or other flavoring principle has been removed.

(2) Allspice or pimento is the dried fruit of *Pimenta officinalis* Lindl.

Standard allspice is allspice containing not less than 8 per cent. of quercitannic acid;[1] not more than 6 per cent. of total ash; not more than 0.5 per cent. of ash insoluble in hydrochloric acid, and not more than 25 per cent. of crude fiber.

(3) Anise is the fruit of *Pimpinella anisum* L.

(4) Bay leaf is the dried leaves of *Laurus nobilis* L.

(5) Black pepper is the dried immature berries of *Piper nigrum* L.

Standard black pepper is black pepper containing not less than 6 per cent. of non-volatile ether extract; not less than 22 per cent. of starch by the diastase method; not less than 28 per cent. of starch by direct inversion;[2] not more than 6.5 per cent. of total ash; not more than 2 per cent. of ash insoluble in hydrochloric acid, and not more than 15 per cent. of crude fiber. One hundred parts of the non-volatile ether extract contain not less than 3.25 parts of nitrogen.

---

[1] Calculated from the total oxygen absorbed by the aqueous extract.

[2] Copper-reducing matters by direct inversion, calculated as starch.

The admixture of pepper shells, pepper dust and other pepper by-products with pepper is an adulteration.

(6) Capers are the flower-buds of *Capparis spinosa* L.

(7) Caraway is the fruit of *Carum carvi* L.

(8) Cayenne pepper, Cayenne, or red pepper is the dried, ripe fruit of *Capsicum fastigiatum* D. C., *Capsicum frutescens* L., *Capsicum baccatum* L., or some other small-fruited species of capsicum.

Standard Cayenne pepper is Cayenne pepper containing not less than 15 per cent. of non-volatile ether extract; not more than 6.5 per cent. of total ash; not more than 0.5 per cent. of ash insoluble in hydrochloric acid; not more than 1.5 per cent. of starch by the diastase method, and not more than 28 per cent. of crude fiber.

(9) Celery seed is the dried seed of *Apium graveolens* L.

(10) Cinnamon is the dried bark of any species of the genus *Cinnamomum* from which the outer layers may or may not have been removed.

(11) True cinnamon is the dried inner bark of *Cinnamomum zeylanicum* Breyne.

(12) Cassia is the dried bark of various species of *Cinnamomum*, other than *Cinnamomum zeylanicum*, from which the outer layers may or may not have been removed.

(13) Cassia buds are the dried immature fruit of a species of *Cinnamomum*.

(14) Ground cinnamon or ground cassia is a powder consisting of cinnamon, cassia, or cassia buds, or a mixture of these spices.

Standard cinnamon or *cassia* is cinnamon or cassia containing not more than 8 per cent. of total ash and not more than 2 per cent. of sand.

(15) Cloves are dried flower-buds of *Jambosa caryophyllus* Ndz. (*Caryophyllus aromaticus* L.), which contain not more than 5 per cent. of clove stems.

Standard cloves are cloves containing not less than 10 per cent. of volatile ether; not less than 12 per cent. of quercitannic acid;[1] not more than 8 per cent. of total ash; not more than 0.5 per cent. of ash insoluble in hydrochloric acid, and not more than 10 per cent. of crude fiber.

(16) Coriander is the dried fruit of *Coriandrum sativum* L.

(17) Cumin seed is the fruit of *Cuminum cyminum* L.

(18) Dill seed is the fruit of *Peucedanum graveolens* Hiern.

(19) Fennel is the fruit of *Fœniculum vulgare* Gaertn.

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[1] Calculated from the total oxygen absorbed by the aqueous extract.

(20) Ginger is the washed and dried, or decorticated and dried, rhizome of *Zingiber officinale* Roscoe.

Standard ginger is ground or whole ginger containing not less than 42 per cent. of starch by the diastase method; not less than 46 per cent. of starch by direct inversion;[1] not more than 8 per cent. of crude fiber; not more than 8 per cent. of total ash; not more than 1 per cent. of lime, and not more than 3 per cent. of ash insoluble in hydrochloric acid.

(21) Limed or bleached ginger is whole ginger coated with carbonate of lime.

Standard limed or *bleached ginger* is limed or bleached ginger containing not more than 10 per cent. of ash; not more than 4 per cent. of carbonate of lime; and conforming in other respects to standard ginger.

(22) Horseradish is the root of *Cochlearia armoracia* L.

Standard grated or *ground horseradish* may be mixed with vinegar, but contains no other foreign materials.

(23) Long pepper is the dried fruit of *Piper longum* L.

(24) Mace is the dried arillus of *Myristica fragrans* Houttuyn.

Standard mace is mace containing not less than 20 per cent. of non-volatile ether extract; not more than 30 per cent. of non-volatile ether extract; not more than 3 per cent. of total ash; not more than 0.5 per cent. of ash insoluble in hydrochloric acid, and not more than 10 per cent. of crude fiber.

(25) Macassar or Papua mace is the dried arillus of *Myristica argentea* Warb.

(26) Bombay mace is the dried *Arillus malabarica* Lamark.

(27) Marjoram is the leaves, flowers and branches of *Origanum majorana* L.

(28) Mustard seed is the seed of *Sinapis alba* L. (white mustard), *Brassica nigra* Koch. (black or brown mustard), or *Sinapis juncea* Mayer (Sarepta mustard).

(29) Ground mustard is a powder made solely from mustard seed, with or without the removal of the hulls and a portion of the fixed oil, but without the addition of any other substance.

Standard ground mustard is mustard containing not more than 2.5 per cent. of starch by the diastase method, and not more than 8 per cent. of total ash.

(30) Nutmeg is the dried seed of *Myristica fragrans* Houttuyn, deprived of its testa and with or without a thin coating of lime.

Standard nutmegs, ground or unground, are nutmegs containing not less than 25 per cent. of non-volatile ether extract; not more than 5 per cent. of total ash; not more than 0.5 per cent. of ash insoluble in hydrochloric acid, and not more than 10 per cent. of crude fiber.

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[1] Copper-reducing matters by direct inversion calculated as starch.

(31) Macassar, Papua, male or long nutmeg is the dried seed of *Myristica argentea* Warb. deprived of its testa.

(32) Paprica is the dried, ripe fruit of *Capsicum annuum* L., *Capsicum longum* D. C., or some other large-fruited species of *Capsicum*.

(33) Saffron is the dried stigmas of *Crocus sativus* L.

(34) Sage is the leaves of *Salvia officinalis* L.

(35) Savory, or summer savory, is the leaves, blossoms and branches of *Satureja hortensis* L.

(36) Thyme is the leaves and ends of blooming branches of *Thymus vulgaris* L.

(37) White pepper is the dried, mature berries of *Piper nigrum* L., from which the outer coating, or the outer and inner coatings, have been removed.

Standard white pepper is white pepper containing not less than 6 per cent. of non-volatile ether extract; not less than 53 per cent. of starch by the diastase method; not less than 40 per cent. of starch by direct inversion; not more than 3 per cent. of total ash; not more than 0.5 of ash insoluble in hydrochloric acid, and not more than 5 per cent. of crude fiber. One hundred parts of the non-volatile ether extract contain not less than 4 parts of nitrogen.

B. FRUIT EXTRACTS.

C. SALAD OILS.

D. SALT.

(Schedules in preparation.)

E. BEVERAGES (AND VINEGAR).

TEA (*a*) AND COFFEE (*b*). (Schedules in preparation.)

COCOA AND COCOA PRODUCTS (*c*). The following definitions and standards do not apply to cocoa products used exclusively as candy.

Definitions: (1) Cocoa beans are the seeds of the cacao tree, *Theobroma cacao* L.

(2) Cocoa-nibs or cracked cocoa is the roasted, broken cocoa bean freed from its shell or husk.

(3) Cocoa, breakfast cocoa or powdered cocoa is cocoa-nibs, with or without the germ, deprived of a portion of its fat and finely pulverized.

Standard cocoa is cocoa containing not less than 20 per cent. of cocoa-fat, and percentages of ash, crude fiber and starch corresponding to those in chocolate after correction for fat removed.

(4) Dutch process cocoa is cocoa prepared with the use of fixed alkalies.

(5) Sweet or sweetened cocoa is cocoa mixed with sugar (sucrose.)

Standard sweet cocoa **is sweet cocoa containing not more than 60 per cent. of sugar (sucrose), and in the sugar- and fat-free residue no higher percentage of either ash, crude fiber or starch than is found in the sugar- and fat-free residue of plain chocolate.**

(6) Chocolate, plain or bitter, is the solid or plastic mass obtained by grinding cocoa-nibs without the removal of fat or other constituents except the germ.

Standard chocolate **is chocolate containing not more than 3.75 per cent. of ash, 3 per cent. of crude fiber, and 9 per cent. of starch, nor less than 48 per cent. of cocoa-fat.**

(7) Sweet chocolate is plain chocolate mixed with sugar (sucrose) with or without the addition of cocoa-butter, spices, or other flavoring materials.

Standard sweet chocolate **is sweet chocolate containing not more than 60 per cent. of sugar (sucrose), and in the sugar- and fat-free residue no higher percentage of either ash, fiber or starch than is found in the sugar- and fat-free residue of plain chocolate.**

FRUIT JUICES, fresh, sweet, and fermented (*d*), VINEGAR (*e*), MEAD, ROOT BEER, ETC. (*f*), MALT LIQUORS (*g*), SPIRITUOUS LIQUORS (*h*), and CARBONATED WATERS, ETC. (*i*). (Schedules in preparation.)

F. Preservatives and Coloring Matters.

(In preparation.)

NOTE.—The above standards, as adopted by the United States Department of Agriculture, were adopted by the Kansas State Board of Health as the standard of purity, quality and strength for food products in Kansas, at its annual meeting, June 21, 1905. See rule 19, which reads: "The standards of purity, quality and strength adopted by this Board are those adopted by the United States Department of Agriculture."—SEC.

Full Text of the National Pure-food Bill as Passed.

An Act for preventing the manufacture, sale or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines, and liquors, and for regulating traffic therein, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it shall be unlawful for any person to manufacture, sell or offer for sale within any territory or the District of Columbia, or deliver for shipment or to cause to be delivered, shipped or transported from within any state, territory of District of Columbia to any state, territory, or District of Columbia, or foreign country, any article of food, drugs, medicines or liquors which is adulterated or misbranded, or which contains any poisonous or deleterious substance, within the meaning of this act, and any person who shall violate any of the provisions of this section shall be guilty of a misdemeanor, and for each offense shall, upon conviction thereof, be fined not to exceed $500, or shall be sentenced to one year's imprisonment, or both such fine and imprisonment, in the discretion of the court, and for each subsequent offense and conviction thereof shall be fined not less than $1000, or be sentenced to one year's imprisonment, or both such fine and imprisonment, in the discretion of the court.

Sec. 2. That the introduction into any state or territory or the District of Columbia from any other state or territory or the District of Columbia, or from any foreign country, or shipment to any foreign country, of any article of food or drugs which is adulterated or misbranded, within the meaning of this act, is hereby prohibited; and any person who shall ship or deliver for shipment from any state or territory or the District of Columbia, to any other state or territory or the District of Columbia, or to a foreign country, or who shall receive in any state or territory or the District of Columbia from any other state or territory or the District of Columbia, or foreign country, and having so received, shall deliver, in original unbroken packages, for pay or otherwise, or offer to deliver to any person, any such article so adulterated or misbranded within the meaning of this act, or any person who shall sell or offer for sale in the District of Columbia or the territories of the United States any such adulterated or misbranded foods or drugs, or offer to export the same to any foreign country, shall be guilty of a misdemeanor, and for such offense be fined not exceeding $200 for the first offense, and upon conviction for each subsequent offense not exceeding $300 or be imprisoned not exceeding one year, or both, in the discretion of the court;

provided, that no article shall be deemed misbranded or adulterated within the provisions of this act when intended for export to any foreign country and prepared or packed according to the specifications or directions of the foreign purchaser, when no substance is used in the preparation or packing thereof in conflict with the laws of the foreign country to which said article is intended to be shipped; but if said article shall be in fact sold or offered for sale for domestic use or consumption, then this proviso shall not exempt said article from the operation of any of the other provisions of this act.

UNIFORM RULES BY VARIOUS AUTHORITIES.

SEC. 3. That the secretary of the treasury, the secretary of agriculture and the secretary of commerce and labor shall make uniform rules and regulations for carrying out the provisions of this act, including the collection and examination of specimens of foods and drugs manufactured or offered for sale in the District of Columbia, or in any territory of the United States, or which shall be offered for sale in unbroken packages in any state other than that in which they shall have been respectively manufactured or produced, or which shall be received from any foreign country or intended for shipment to any foreign country, or which may be submitted for examination by the chief health, food or drug officer of any state, territory or in the District of Columbia, or at any domestic or foreign port through which such product is offered for interstate commerce, or for export or import between the United States and any foreign port or country.

SEC. 4. That the examinations of specimens of foods and drugs shall be made in the bureau of chemistry of the Department of Agriculture, or under the direction and supervision of such bureau, for the purpose of determining from such examinations whether such articles are adulterated or misbranded within the meaning of this act; and if it shall appear from any such examination that any such specimen is adulterated or misbranded within the meaning of this act, the secretary of agriculture shall cause notice thereof to be given to the party from whom such sample was obtained. Any party so notified shall be given an opportunity to be heard, under such rules and regulations as may be prescribed as aforesaid, and if it appears that any of the provisions of this act have been violated by such party, then the secretary of agriculture shall at once certify the facts to the proper United States district attorney, with a copy of the results of the analysis or the examination of such article, duly authenticated by the analyst or officer making such examination, under the oath of such officer. After judgment of the court, notice shall be given by publication in such manner as may be prescribed by the rules and regulations aforesaid.

Sec. 5. That it shall be the duty of each district attorney to whom the secretary of agriculture shall report any violation of this act, or to whom any health or food or drug officer or agent of any state, territory or the District of Columbia shall present satisfactory evidence of any such violation, to cause appropriate proceedings to be commenced and prosecuted in the proper courts of the United States, without delay, for the enforcement of the penalties as in such case herein provided.

Sec. 6. That the term "drug," as used in this act, shall include all medicines and preparations recognized in the United States Pharmacopœia or National Formulary for internal or external use, and any substance or mixture of substances intended to be used for the cure, mitigation or the prevention of disease of either man or other animals. The term "food," as used herein, shall include all articles used for food, drink, confectionery or condiment by man or other animals, whether simple, mixed, or compound.

WHEN ARTICLES SHALL BE DEEMED ADULTERATED.

Sec. 7. That for the purposes of this act an article shall be deemed to be adulterated—

In case of drugs: *First.*—If, when a drug is sold under or by a name recognized in the United States Pharmacopœia or National Formulary, it differs from the standard of strength, quality or purity as determined by the test laid down in the United States Pharmacopœia formulary official at the time of investigation; provided, that no drug defined in the United States Pharmacopœia or National Formulary shall be deemed to be adulterated under this provision if the standard of strength, quality or purity be plainly stated upon the bottle, box or other container thereof, although the standard may differ from that determined by the test laid down in the United States Pharmacopœia or National Formulary.

Second.—If its strength or purity fall below the professed standard or quality under which it is sold.

In the case of confectionery: If it contains terra alba, barytes, talc, chrome yellow, or other mineral substance or poisonous color or flavor, or other ingredient deleterious or detrimental to health, or any vinous, malt or spirituous liquor or compound or narcotic drug.

In the case of food: *First.*—If any substance has been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength.

Second.—If any substance has been substituted wholly or in part for the article.

Third.—If any valuable constituent of the article has been wholly or in part abstracted.

Fourth.—If it be mixed, colored, powdered, coated or stained in a manner whereby damage or inferiority is concealed.

Fifth.—If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health; provided, that when, in the preparation of food products for shipment, they are preserved by an external application applied in such manner that the preservative is necessarily removed mechanically, or by maceration in water, or otherwise, and directions for the removal of said preservative shall be printed on the covering or the package, the provisions of this act shall be construed as applying only when said products are ready for consumption.

Sixth.—If it consists in whole or in part of filthy, decomposed or putrid animal or vegetable substance, or any portion of an animal unfit for food, whether manufactured or not, or if it is the product of a diseased animal, or one that has died otherwise than by slaughter.

SEC. 8. That the term "misbranded," as used herein, shall apply to all drugs, or articles of food, or articles which enter into the composition of food, the package or label of which shall bear any statement, design or device regarding such article, or the ingredients or substances contained therein, that shall be false or misleading in any particular, and to any food or drug product which is falsely branded as to the state, territory or country in which it is manufactured or produced.

WHEN ARTICLES SHALL BE DEEMED MISBRANDED.

That for the purposes of this act an article also shall be deemed to be misbranded —

In case of drugs: *First.*—If it be an imitation of or offered for sale under the name of another article.

Second.—If the contents of the package as originally put up shall have been removed, in whole or in part, and other contents shall have been placed in such package, or if the package fail to bear a statement on the label of the quantity or proportion of any alcohol, morphine, opium, cocaine, heroin, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate or acetanilid or any substances contained therein.

In the case of food: *First.*—If it be an imitation of or offered for sale under the distinctive name of another article.

Second.—If it be labeled or branded so as to deceive or mislead the purchaser, or purport to be a foreign product, when not so, or if the contents of the package as originally put up shall have been removed in whole or in part, and other contents shall have been placed in such package, or if it fail to bear a statement on the label of the quantity or proportion of any morphine, opium, cocaine, heroin, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate or acetanilid or any derivative or preparation of any of such substances contained therein.

Third.—If in package form, and the contents are stated in terms of weight or measure, they are not plainly and correctly stated on the outside of the package.

Fourth.—If the package containing it or its label shall bear any statement, design or device regarding the ingredients or the substances contained therein, which statement, design or device shall be false or misleading in any particular; provided, that an article of food which does not contain any added poisonous or deleterious ingredients shall not be deemed to be adulterated or misbranded in the following cases:

(1) In the case of mixtures or compounds which may be now or from time to time hereafter known as articles of food, under their own distinctive names, and not an imitation of or offered for sale under the distinctive name of another article, if the name be accompanied on the same label or brand with a statement of the place where said articles have been manufactured or produced.

(2) In the case of articles labeled, branded or tagged so as to plainly indicate that they are compounds, or blends, and the word "compound," "imitation," or "blend," as the case may be, is plainly stated on the package in which it is offered for sale; provided, that the term "blend" as used herein shall be construed to mean a mixture of like substances, not excluding harmless coloring or flavoring ingredients used for the purpose of coloring and flavoring only; and provided further, that nothing in this act shall be construed as requiring or compelling proprietors or manufacturers of proprietary foods which contain no unwholesome added ingredient to disclose their true formulas, except in so far as the provisions of this act may require to secure freedom from adulteration or misbranding.

MANUFACTURERS OF PURE FOODS NEED NOT DISCLOSE FORMULAS.

SEC. 9. That no dealer shall be prosecuted under the provisions of this act when he can establish a guaranty signed by the wholesaler, jobber, manufacturer, or other party residing in the United States, from whom he purchases such articles, to the effect that the same is not adulterated or misbranded within the meaning of this act, designating it. Said guaranty, to afford protection, shall contain the name and address of the party or parties making the sale of such articles to such dealers, and in such case said party or parties shall be amenable to the prosecution, fines and other penalties which would attach, in due course, to the dealer under the provisions of this act.

SEC. 10. That any article of food, drug or liquor that is adulterated or misbranded within the meaning of this act, and is being transported from one state, territory, District of Columbia or insular possession to another for sale, or, having been transported, remains unloaded, unsold, or in original unbroken packages, or if it be sold or offered for sale in the District of Columbia or the territories, or insular possessions of the United States, or if it be imported from a foreign country for sale, or if it is intended for export to a foreign country, shall be liable to be proceeded against in any district court of the United States within the district where the same is found, and seized for confiscation by a process of libel for condemnation. And if such article is condemned as being adulterated or misbranded, or of a poisonous or deleterious character, within the meaning of this act, the same shall be disposed of by destruction or sale, as the said court may direct, and the proceeds thereof, if sold, less the legal costs and charges, shall be paid into the treasury of the United States, but such goods shall not be sold in any jurisdiction contrary to the provisions of this act or the laws of that jurisdiction; provided, however, that upon the payment of the costs of such libel proceedings and the execution and delivery of a good and sufficient bond to the effect that such articles shall not be sold or otherwise disposed of contrary to the provisions of this act, or the laws of any state, territory, district, or insular possession, the court may by order direct that such articles be delivered to the owner thereof. The proceedings of such libel cases shall conform, as near as may be, to the proceedings in admiralty, except that either party may demand trial by jury of any issue of fact joined in any such case, and all such proceedings shall be at the suit of and in the name of the United States.

SECRETARY OF TREASURY SHALL DELIVER SAMPLES OF IMPORTED FOODS.

SEC. 11. The secretary of the treasury shall deliver to the secretary of agriculture, upon his request from time to time, samples of foods and drugs which are being imported into the United States or offered for import, giving notice thereof to the owner or consignee, who may appear before the secretary of agriculture and have the right to introduce testimony, and if it appear from the examination of such samples that any article of food or drug offered to be imported into the United States is adulterated or misbranded within the meaning of this act, or is otherwise dangerous to the health of the people of the United States, or is of the kind forbidden entry into or forbidden to be sold or restricted in sale in the country in which it is made or from which it is exported, or is otherwise falsely labeled in any respect, the said article shall be refused admission, and the secretary of the treasury shall refuse delivery to the consignee, and shall cause the destruction of any goods refused delivery which shall not be exported by the consignee within three months from the date of notice of such refusal, under such regulations as the secretary of the treasury may prescribe; provided, that the secretary of the treasury may deliver to the consignee such goods pending the examination and decision in tne matter on execution of a penal bond for the amount of the full invoice value of such goods, together with the duty thereon, and on refusal to return such goods for any cause to the custody of the secretary of the treasury, when demanded, for the purpose of excluding them from the country, or for any other purpose, said consignee shall forfeit the full amount of the bond; and provided further, that all charges for storage, cartage and labor on goods which are refused admission or delivery shall be paid by the owner or consignee, and in default of such payment shall constitute a lien against any future importation made by such owner or consignee.

SEC. 12. That the term "territory" as used in this act shall include the insular possessions of the United States. The word "person" as used in this act shall be construed to import both the plural and the singular, as the case demands, and shall include corporations, companies, societies, and associations. When construing and enforcing the provisions of this act, the act, omission or failure of any officer, agent or any other person acting for or employed by any corporation, company, society, or association, within the scope of his employment or office, shall in every case be also deemed to be the act, omission or failure of such corporation, company, society, or association, as well as that of the person.

SEC. 13. That this act shall be in force and effect from and afterthe 1st day of January, 1907.

[The enactment of the foregoing law will do much towards solving the pure food, drug and drink problem of the United States, and have a marked tendency toward bringing about a uniformity of pure-food laws, rules, and regulations. It should be noted, however, that the manufacture and sale of food products and drinks within the state where manufactured is not touched by this law; therefore the necessity still exists for stringent food laws and careful food inspection and analyses by the respective states. It is hoped that our next legislature will so amend the food laws of Kansas as to be in conformity with the federal laws.—SEC.]

Kansas Campaign against Tuberculosis.

At the annual meeting of the State Board of Health, in June, it was determined to collect a census of all tubercular cases in Kansas as a preliminary step in the campaign against the "great white plague." In accordance with this order, the secretary prepared the following letter and blank, which will be mailed to every physician in the state, with the request that all cases under his treatment or observation be reported direct to the office of the secretary:

SEPTEMBER 1, 1906.

DEAR DOCTOR—At the annual meeting, in June, the State Board of Health ordered the secretary to undertake a census of all tubercular cases in Kansas. It is thought that such a tabulation of cases will be productive of good in the general campaign now on against this dread disease, and furnish data for an intelligent understanding of the scope of the work to be accomplished and specific information for direct and personal application of proposed methods.

The scope and methods may be briefly outlined as follows: First—Every physician in the state will receive a copy of this letter, with enclosed blanks, with the request that each case of tuberculosis under his treatment, or within his knowledge and not under the care of any physician, be reported, filling in the data called for as completely as possible. Second—That all suspected cases be thoroughly examined, using the state laboratory, if desired, for the examination of sputum. Such examination will be free of charge. Mailing-tubes can be had at repositories for that purpose. Third—A list of the names and addresses of all those dying from pulmonary tuberculosis during the past year will be mailed to each county and municipal health officer, with the request to make inquiry and inspection as to whether or not the proper sanitary precautions were taken after the termination of each case, such as fumigation, etc.

It is proposed then to put into the hands of each case reported, including suspected cases, and in each family where a fatal case has occurred during the past year, a pamphlet containing information along the lines of prevention and hygiene. This pamphlet will be compiled largely after the one just issued by the United States government by a committee of three appointed by the president, and which included the surgeons-general of the army, navy, and marine-hospital service.

It is to be understood that the information obtained is to be used only in the manner above indicated. Physicians who for any reason desire the pamphlets withheld, or any who would prefer to review them before giving them in person to patients, will please so indicate, and such instructions will be scrupulously observed.

May we not have your hearty cooperation in this first organized effort by Kansas in the fight against the "great white plague"? Surely it is worth the little of your time that it will take. It is confidently hoped that, with the definite location of the points of infection, both of persons and places, which will enable us to apply appropriate preventive measures, and the early diagnosis of incipient cases by a careful examination of all suspects by yourself, much immediate good may be done and a forward step be taken along the lines of *prevention*, which must be the final solution of this great problem.

Stamped envelope enclosed for returns, which should be made at the earliest possible date. Very truly yours,

KANSAS STATE BOARD OF HEALTH.
By S. J. CRUMBINE, M. D., *Secretary*.

BLANK.

County ....
Name ....
Residence ....
Age .... Sex .... Occupation ....
Married or single? .... Number of members in family ....
Family history ....
What is probable source of infection? ....
Condition of surroundings ....
Stage and progress of disease ....
Returned by Dr. ....
P. O. ....
Remarks: ....

It is hoped that physicians will consider it their patriotic duty to lend their hearty support and cooperation in this movement, as it rests entirely with the members of the profession as to whether or not the methods herein suggested will prove a success. Aside from valuable data to be used in preventive measures, it will also furnish convincing proof to the members of our next legislature of the need of a tuberculosis sanatorium for incipient cases. The statistics for 1905 show that approximately 1000 deaths were occasioned from tuberculosis in that year, which, multiplied by four (which is the general rule for ascertaining the number of cases), would give us 4000 cases in Kansas at the present time. This is surely a momentous problem and worthy of engaging the serious attention of every professional man and every legislator in our great and wealthy state. Surely no physician will refuse to send in the necessary information asked for. It is suggested that those who have no cases to report will so indicate by marking a blank and sending in, that we may know the request has not been ignored.

Pyrofume.

Reports to the Surgeon-general, Public Health and Marine Hospital Service.

EXPERIMENTS WITH PYROFUME FOR MOSQUITO DESTRUCTION.

Passed Assistant Surgeon Francis, Mobile, Ala., reports, June 5, as follows:

Pyrofume was discovered by Dr. J. H. McCormick, of Mobile, and it was at his suggestion and with his cooperation that the following experiments were performed.

Pyrofume is derived by fractional distillation from pine wood, as a by-product in the manufacture of turpentine, etc. It is a clear liquid, of a straw color; it has a pungent taste and an odor of pine woods. It is harmless to mucous membranes, skin, fabrics, colors, polished metals, and paint work. When heated in a test-tube to a temperature of 60 deg. C. (140 deg. F.), a lighted match will cause a flash at the mouth of the tube. If a lighted match be applied for a few seconds to the surface of an open basin containing pyrofume the liquid takes fire.

If pyrofume be boiled in an open basin the fumes will be given off in a limited amount, but if a current of air be directed on the surface of the boiling liquid the fumes rise in a cloud. If a flame be brought into the fumes within a few inches of the surface of the liquid the fumes ignite, and the entire surface of the liquid burns with a vigorous blaze, which can be extinguished instantly by dropping a lid or a single layer of cloth over the basin.

Since the fumes as they come off the liquid can be ignited, the question arises whether there is danger from carrying a flame into a room full of fumes. In order to decide this question, a room of 250 cubic feet capacity was charged with the fumes from four times the liquid necessary to kill mosquitoes. A lighted candle was then introduced into the room through a small opening. The fumes did not ignite. The experiment was repeated with ten times and twenty times the amount necessary to kill mosquitoes and the fumes did not take fire.

The fumes are deadly to *Stegomyia fasciata* and *Culex pungens*.

After considerable experimentation on different methods of generation of the fumes, it was finally decided that the best results were obtained by an apparatus consisting of a cylindrical upright retort, six inches in diameter and twenty-four inches in height, under which is placed a primus lamp. At the upper end of the retort are an inlet tube and an outlet tube. The outlet tube is three inches in diameter and its free end is introduced into the room to be fumigated. The inlet tube is three inches in diameter and is attached to a hand blower.

The amount of pyrofume necessary for the cubic contents of the room is put into the retort, the primus lamp is placed beneath it, and the blower is started, blowing the fumes from the surface of the liquid through the outlet tube, which is passed beneath a window-sash, or through the crack of a door or a hole in a curtain, and so into the room.

Mosquitoes placed in a room containing the fumes from 265 cubic centimeters of pyrofume per 1000 cubic feet of air space will be killed after one hour. The time of exposure may be diminished one-half by increasing the amount of pyrofume. The time necessary to generate the fumes is very short. A room with a capacity of 5000 cubic feet can be filled with fumes in five minutes. A room of 53,000 cubic feet capacity was filled with fumes in forty-five minutes. With the apparatus in use, the time required to generate the fumes necessary to kill the mosquitoes in a room is one minute per 1000 cubic feet of space.

When the fumes are being introduced into a room they are more dense at the ceiling than at the floor, but in a few minutes the diffusion is equal.

The room of 53,000 cubic feet, above referred to, had a ceiling twenty-six feet in height. Mosquitoes placed on the floor and near the ceiling were found dead at the end of one hour's exposure to the fumes.

Polished silver, brass, copper, steel, nickel, wrought iron, cast iron, a great variety of colored fabrics, polished mahogany and oak and varnished and white painted work were exposed to double the fumes twice the time necessary to kill mosquitoes, namely, to the fumes of 530 cubic centimeters of pyrofume per 1000 cubic feet of air space for two hours. All were unaltered. The same articles were exposed to the same treatment the day following and remained unchanged.

Bananas in all stages, from ripe to very green, were exposed to the fumes necessary to kill mosquitoes, namely, to the fumes from 265 cubic centimeters of pyrofume, for one hour. The fruit was unharmed and was kept under observation for one week; it was not discolored, altered in taste, checked in ripening, or changed in any way. Bananas in all stages of ripeness were exposed to double the fumes twice the time necessary to kill mosquitoes, and all the fruit was discolored.

The cost of pyrofume is seventy-five cents per gallon. Two hundred sixty-five cubic centimeters per 1000 cubic feet of air space are required. This brings the price of material to five cents per 1000 cubic feet.

SUMMARY.

1. As compared with sulfur, pyrofume stands on an equal footing in price.
2. Whereas the federal regulations require two hours' exposure to sulfur, pyrofume is efficient against mosquitoes in one hour.
3. While sulfur is injurious to metals, fabrics, paint, and colors, pyrofume leaves them unchanged.
4. Pyrofume is suitable for fumigating the engine-rooms and cabins of ships, and for cars and fine residences.
5. In amounts necessary to kill mosquitoes it does not injure bananas.
6. A person can walk about in a room full of fumes, and can sleep without discomfort in a room two hours after fumigation.
7. It requires only five minutes to fumigate a large room of 5000 cubic feet.
8. The fumes are generated outside the room and conducted into it.

Cleanliness Should be Taught in Schools.

The following admirable report of the Massachusetts Association of Boards of Health should come to the notice of every school-teacher and parent in the state of Kansas, as the suggestions therein contained are of vital importance not only in the prevention of disease, but in the inculcation of cleanliness and correct habits. Something more should be taught in the schools than arithmetic, reading, etc., and just so soon as the school-teachers and boards of education are alive to the vital importance of the suggestions set forth in this article, just so soon will the prevalence of contagious and infectious diseases be reduced to a minimum, and much sickness and suffering prevented and many lives saved. It is suggested that county health officers cause to have published in the official county paper the following letter:

The poisons of some of the common and also of the most loathsome diseases are frequently contained in the mouth. In such cases anything which is moistened by the saliva of the infected person may, if it touches the lips of another, convey disease. The more direct the contact the greater the danger.

It is the purpose of health officials to keep in isolation all persons having communicable diseases during the time that they are infectious. But in many cases this is impossible. Little restraint is put on certain mild diseases, as measles, whooping-cough, chicken-pox, and mumps, and even such diseases as diphtheria, scarlet fever and tuberculosis are frequently so mild as to be unnoticed, and children affected with them mingle freely with others. It is probable that in such cases one of the chief vehicles of contagion is the secretion of the mouth and nose.

It is believed that much can be done to prevent contagion by teaching habits of cleanliness. *But if such instruction is to be effectual it must be continuous.* The teacher should notice and correct violations of these rules as habitually as violations of the more formal school rules are corrected.

Even if the question of disease and contagion did not enter into the matter at all, the subject ought to be given more attention by teachers. Our schools should not only teach reading, writing, and arithmetic, but it is, perhaps, quite as important that they should inculcate cleanliness, decency, refinement, and manners.

Cleanliness should be taught for its own sake, even if it had no relation whatever to health.

Children should be taught: Not to spit; it is rarely necessary. To spit on a slate, floor or sidewalk is an abomination. Not to put the fingers into the mouth. Not to pick the nose. Not to wet the fingers with saliva in turning the leaves of books. Not to put pencils into the mouth or moisten them with the lips. Not to put money into the mouth. Not to put pins into the mouth. Not to put anything into the mouth except food and drink and the tooth-brush. Not to swap apple cores, candy, chewing-gum, "all-day slickers," half-eaten food, whistles, or bean-blowers, or anything that is habitually put into the mouth.

Teach the children to wash the hands and face often. See that they keep them clean. If a child is coming down with a communicable disease it is reasonable to believe that there is less chance of infecting persons and things if the hands and face are washed clean and not daubed with the secretions of the nose and mouth.

Teach the children to turn the face aside when coughing and sneezing—especially if they are facing another person, or when at table.

Children should be taught that their bodies are their own private possessions; that personal cleanliness is a duty; that the mouth is for eating and speaking, and should not be used as a pocket, and that the lips should not take the place of fingers.

Typhoid Fever—Methods of Transmission.

The following is an abstract from the advance sheets of the Transactions of the Third Annual Conference of the Marine Hospital Service with State Health Authorities.—SEC.

At the third annual conference of state and territorial health authorities with the surgeon-general of the Public Health and Marine Hospital Service, at Washington, D. C., May 15, 1905, among the subjects for general discussion was that of the transmission of typhoid fever. The discussion, which occupied several hours, was participated in by sanitarians of reputation and experience, twenty-two of whom attended the conference as representatives of twenty-one states and the District of Columbia.

The statement of Dr. Victor C. Vaughan, that two-thirds of the cases in military camps were due to infection by *personal contact*, will be of surprising interest to most sanitarians, and while urban conditions differ widely from those encountered in camps, still the statements of himself and others with regard to personal contact, infected houses, bedding, clothing, eating and other utensils, etc., are pertinent at the present time as showing the means other than water-supplies of the spread of this disease in cities.

After announcing the topic for discussion, the surgeon-general called upon Dr. Victor C. Vaughan, of Michigan, stating that the conference was fortunate in having Doctor Vaughan present, as he was one of the members of the commission appointed by the secretary of war in 1898 to investigate the origin and spread of typhoid in the United States military camps during the Spanish war of 1898.

Doctor Vaughan, in responding, stated that he was the sole survivor of this commission, which, as appointed, were Major Walter Reed, Doctor Shakespeare, of Philadelphia, and himself. Remark as to Doctor Reed he felt to be unnecessary, in view of the distinction that had crowned his subsequent work on yellow fever; but he felt that a word of appreciation was due to Doctor Shakespeare, whose work had been painstaking, thorough, without cessation, and of such an arduous nature that there could be no question that it had shortened his life, and the report of the commission must be regarded as a monument to the skill and devotion of Doctor Shakespeare.

Doctor Vaughan stated that he had formerly held the view that ninety-five per cent. of the typhoid cases were transmitted by drinking water, and, as a teacher, had so instructed his classes for years. In fact, the commission went to the various military camps impressed with the belief that the water-supply was at fault, but the experiences and the information collected by the commission had led him to radically change his views. He believes now that the spread of the disease is largely by personal contact. From the observations made by the latter, he had reached the conclusion that, under the conditions maintaining in military camps, personal contact was responsible for the spread of the disease in about 66⅔ per cent. of the cases.

In the seventh army corps, at Jacksonville, there was a very large number of cases of typhoid fever. The camp was supplied with the city water-supply of Jacksonville, and contained about 30,000 troops, many of them regulars. The population of the city of Jacksonville was about the same in numbers. The water being the same, the population of the city and the camp approximately the same, there were during the same period in the city of Jacksonville only seven or eight cases of typhoid fever.

The tests of the water-supply for typhoid infection at Camp Alger, Jacksonville and Chickamauga were negative in each instance. Doctor Vaughan went on to give more instructive observations as to the course of the disease. He showed that when camps were changed typhoid fever seemed to follow, in companies, by regiments, and by brigades. An instance was cited by him of a Pennsylvania command, whose camp was frequently changed, and which invariably carried its typhoid with it, and this typhoid continued until a thorough *disinfection* was made of the tents, blankets, and the personal clothing of the command. Then, and not until then, did the typhoid fever diminish and finally disappear.

At Jacksonville, Chickamauga and Camp Alger the fly was likewise an agent in the dissemination of typhoid, as was also the dust, the latter, of course, being contaminated with typhoid infection. He was, therefore, led to the conclusion that typhoid fever is not only infectious, but contagious in the ordinary acceptation of the term, and he believed that the result of the observations of the commission showed that *disinfection* is just as necessary after typhoid fever as it is after diphtheria and scarlet fever or other contagious diseases.

The remarks of Doctor Vaughan were listened to with profound attention, and many additional points of information were elicited from him by questions from various members of the conference.

Doctor Young, secretary of the State Board of Health of Maine, has been carrying on an investigation for some time, and his results are in striking accord with all which have been detailed by Doctor Vaughan. Doctor Young's information leads to the belief that the infection of the hands, bedding, towels and utensils plays an important part in the dissemination of infection.

Doctor Harrington, of Boston, stated that recent observations in Germany led to the belief in the correctness of the views expressed by Doctor Vaughan. He cited the publication of recent observations of an outbreak of typhoid fever occurring in eastern Prussia, near the borders of Poland. The region had suffered a period of agricultural depression, but recently important mineral discoveries were made, and laborers flocked to the site, especially from Poland. An outbreak of typhoid fever occurred, and the water-supply, the food supply, and the milk supply formed the subject of investigation, and were found to be above suspicion. All the observations were made by competent observers, and led to the belief that the spread of the disease was by actual contact from one dirty person to another, rather than by the heretofore recognized carrier of infection.

Dr. H. D. Holton, of Vermont, cited an instance of an outbreak of typhoid in a school of about 135 inmates; one case of typhoid in the school shortly after the reassembling of the school after vacation led to thirteen or fourteen cases. The water-supply and the milk as supplied to the school were above suspicion, but it was found that the nurses, who were not trained, were in the habit of taking cups or other drinking vessels from the sick-rooms and filling them from a common milk supply kept in a milk-room in another part of the building, and it was found that these milk containers were contaminated with the *bacilli coli* by the hands of the nurses. The regulations of the State Board of Health of Vermont now require the nurses engaged in the care of typhoid cases must disinfect bedclothing and drinking vessels, etc., used by typhoid patients, destroy scraps of food left in the sick-room by burning, and must, whenever leaving the chamber of the sick, disinfect their hands by washing with soap and water.

A similar case was reported by Doctor Lindsley, of Connecticut.

Honest Labeling of Food Materials.

In view of some of the criticisms which have appeared in the press of the state, with reference to our analyses of "evaporated creams," it seems advisable to say a few words regarding the object of the work.

It is well known, as stated by the writer,[1] that "there are, in the main, two methods of adulteration employed: the one harmful and sometimes poisonous to the human system, and the other the deceptive and fraudulent, but not generally injurious to the health of the consumer.

"In those states where enforcement of pure-food laws is carried on, most of the work is devoted to the detection of the harmful and injurious preservatives, while the second method, just mentioned, has been investigated but to a very limited extent, and there are even certain frauds which do not come within the pale of laws now exercised.

"The first method referred to above does not require any extended discussion, because all will agree that no food should be manufactured or sold which contains harmful or injurious ingredients. It would seem that, in the light of our present knowledge, it would be far safer to prohibit the use of preservatives in foods or food materials. If, later on, science can show, as some claim it will, that the small addition of certain preservatives is harmless, then the laws can be modified accordingly. Still it must not be forgotten that the results of experiments made on healthy subjects cannot be expected to be applied to the invalid and convalescent or dyspeptic, for whom many of the foods now containing preservatives are prescribed or recommended.

"With the second method, the deceptive and fraudulent, etc., the case is very different. No one should be prohibited from manufacturing or selling any admixture of foods or food materials, provided the package is *honestly labeled*, thus insuring the sale of the materials *for just what they are.*

"Several forms of mislabeling can be enumerated, among which the following are the most conspicuous: (1) False statements concerning the nature of the contents of packages of foods or food materials; (2) false statements regarding the nutritive value of the different manufactured and prepared foods; (3) false statements or inferences relating to the weight of foods or food materials in any package.

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[1] *California State Medical Journal*, June, 1904.

"With reference to No. 1, it may be said that the fraud, in most cases, is of a pecuniary nature. Cheap materials are added to more expensive ones, thus bringing cheap and inferior products into competition with those from the hands of the honest manufacturer. While the addition of mustard or cottonseed-oil to a salad will not have any appreciable effect on the health of the consumer, still there is the pecuniary fraud which should be prevented. At the same time, no one should be denied the right to buy the cheap oils. But those who wish to purchase pure oil should not have to remain in doubt as to its purity and quality, as at present they so often have to do. The enforcement of proper labeling would obviate all of these difficulties. Again, no prohibitory restrictions should be placed upon the manufacturer who wishes to make a jelly consisting of a mixture of apple and currant, or a corn-starch and fruit jelly, or a butterine made up of butter and oleomargarine, etc., nor, in fact, any compound from the admixture of two or more food materials each of which may possess different nutritive and pecuniary values, provided the proper statements are plainly in evidence on the label.

"In many cases the nature of the main contents of the package is plainly printed, but the type used for the name or names of the adulterants is so small, and often so concealed in the "foliage" of the label, that unless one is very careful he is led to believe that the contents consist entirely of the material indicated by the large type. This is particularly true of honey. There are cases where the words 'Pure Honey' have a prominent position on the label, but only after careful search will one find the statement, '20 per cent. honey and 80 per cent. glucose.' Thus the manufacturer has complied with the law in name, but, as far as the consumer is concerned, has decidedly evaded it in spirit. There would be no objection against the manufacture of butter containing 20 per cent. water, if such be stated on the wrapper and the butter be subjected to a discount; because the purchaser should not be obliged to pay for 8 to 10 per cent. extra of water at the price of butter-fat.

"Prominent among the deceptions practiced under the second form above mentioned may be noted several proprietary foods, infant foods, cereal breakfast foods, coffee substitutes, and 'evaporated creams.' The 'evaporated creams' are excellent food, to which no objection can be raised, but they should be honestly labeled for just what they are. These materials are seldom, if ever, admixed with any poisonous or harmful adulterants.—*M. E. Jaffa.*

Mosquito Brief of the American Mosquito Extermination Society.

1. There are over 100 species of mosquitoes in the United States.

2. Mosquitoes breed only in water. They may breed in any kind of quiet water unstocked with destroying fish.

3. Mosquitoes generally require from one to three weeks to develop from eggs to winged insects in warm weather—longer in cold weather. Some female mosquitoes three days old lay eggs; the average is greater. Some species lay as many as 300 or 400 eggs at once; some lay them singly. Mosquitoes may live several months (as shown by hibernation and otherwise), but probably few live over a month.

4. Mosquitoes do not breed in grass, but rank growths of weeds or grass may conceal small breeding puddles, and form a favorite harboring place for adults. The pitcher-plant holds sufficient water to breed a rare and small species.

5. Different species of mosquitoes have as well-defined habits as different kinds of birds, flies, etc. Some are domestic, some wild, some migratory.

6. Most domestic mosquitoes breed in fresh water, fly short distances, and habitually enter houses.

7. Most migratory mosquitoes breed in salt and brackish marsh areas; fly long distances. They are not conveyers of malaria.

8. Rigid tests, both direct and eliminative, have proved that certain species of mosquitoes are the only known natural means of transmitting malaria and yellow fever. Some other diseases are known to be conveyed by mosquitoes.

9. Of the domestic varieties, the dangerous malarial mosquitoes (several species of the genus *Anopheles*) are among the most generally distributed. They seem never to travel far—only a few hundred yards.

10. A most common and dangerous domestic mosquito in the South and the tropics is *Stegomyia fasciata*, which is the natural conveyer of yellow fever.

11. Mosquitoes are known to bite more than once, as can be seen by observation, and is proved by the transmission of disease from an infected person to a new subject.

12. Mosquitoes are a needless and dangerous pest. Their propagation can be largely prevented by such methods as drainage or filling of wet areas, removal, emptying or screening of water recep-

tacles, spraying standing water with oil, where other remedies are impracticable. Attention should be paid to cisterns, house-vases, cesspools, road-basins, sewers, watering-troughs, roof-gutters, old tin cans, holes in trees, marshes, swamps, and puddles. As malarial mosquitoes may be bred in clear springs, the edges of such places should be kept clean, and they should be stocked with small fish. The breeding and protection of insectivorous birds, such as swallows and martins, should be encouraged. Thorough screening of houses and cisterns is necessary to prevent the spread of malaria or yellow fever. The continued breeding of any kind of mosquitoes, with the attendant menace to public health and to the life and comfort of man and beast, is therefore the result of ignorance or neglect.

The Contagiousness of Desquamating Epithelium.

Welch and Schamberg state that the view has generally been maintained that the infection in scarlet fever persists as long as there is any desquamation. Within recent years the contagiousness of the scales has been seriously questioned.

Millard obtained the opinions of twenty-one experts, sixteen of whom state: "That (1) they can adduce no evidence that desquamating epithelium is, *per se*, a source of infection; (2) they consider that too much importance has been in the past attached to desquamation as a source of infection; (3) their experience does not support the popular view that desquamation after scarlet fever is necessarily an indication that a patient is still infectious; (4) they believe that a patient may continue to desquamate for some time after he has ceased to be infectious; (5) they do not believe that it is necessary, in order to prevent the spread of infection, that patients who otherwise are quite ready to leave the hospital should be detained until every possible trace of desquamating epithelium has disappeared."—*New York Health Department.*

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No. 9. SEPTEMBER, 1906. VOL. 2.

Get busy. Monotony kills.

Faith in one's cause is half the battle.

Nine-tenths of your troubles are imaginary.

Turn it around. Look at the other side.

KITCHEN TEST BULLETIN: Read how you may detect adulterated foods in your kitchen.

You have mistaken the purpose of your grindstone if you are holding your nose to it.

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Rule Governing Cold Storage of Poultry, etc., page 220.

Some Kitchen Tests to Detect Adulteration in Common Foods, page 222.

A Survival of the Unfit, page 231.

VITAL STATISTICS

Reported to the Kansas Board of Health for August, 1906.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tuberculosis. Cases....	Tuberculosis. Deaths...	Typhoid fever. Cases.....	Typhoid fever. Deaths...	Diphtheria. Cases.....	Diphtheria. Deaths...	Scarlet fever. Cases. ...	Scarlet fever. Deaths...	Smallpox. Cases.....	Smallpox. Deaths...	Measles. Cases.....	Measles. Deaths...
Allen	0	0	22	5	0	0	1	0	0	0	0	0
*Anderson..........												
Atchison	0	0	0	0	1	1	1	0	0	0	0	0
Barber												
Barton	1	0	5	0	0	0	0	0	0	0	0	0
Bourbon	3	3	1	1	0	0	0	0	0	0	0	0
Brown..............	0	0	0	0	0	0	0	0	1	0	0	0
Butler	2	2	2	1	2	0	0	0	0	0	0	0
Chase	0	0	9	0	0	0	2	0	0	0	0	0
Chautauqua	1	0	0	0	0	0	0	0	0	0	0	0
Cherokee.....	1	1	2	0	0	0	0	0	0	0	0	0
Cheyenne	1	0	0	0	0	0	0	0	2	0	0	0
Clark..............												
Clay	0	0	3	1	0	0	0	0	0	0	0	0
Cloud	0	0	2	0	1	0	0	0	0	0	0	0
Coffey	0	0	8	3	0	0	0	0	0	0	0	0
†Comanche..........												
Cowley.	2	2	1	1	0	0	0	0	1	0	0	0
Crawford...........	1	1	1	0	1	0	0	0	0	0	0	0
Decatur............	0	0	0	0	0	0	3	0	0	0	0	0
*Dickinson.........												
†Doniphan..........												
Douglas............	0	0	5	4	4	2	0	0	0	0	0	0
†Edwards...........												
Elk................	0	0	0	0	5	1	0	0	0	0	0	0
Ellis..............	0	0	0	0	0	0	3	0	0	0	0	0
*Ellsworth.........												
Finney	0	0	2	2	0	0	0	0	0	0	0	0
*Ford..												
Franklin...........	0	0	3	2	0	0	0	0	0	0	0	0
Geary	2	2	4	2	0	0	0	0	0	0	0	0
*Gove												
†Graham												
‡Grant												
Gray...............												
*Greeley...........												
Greenwood..........	0	0	1	0	0	0	0	0	1	0	0	0
*Hamilton												
Harper.............	1	1	0	0	0	0	4	1	0	0	0	0
Harvey.....	0	0	5	0	0	0	1	1	0	0	0	0
Haskell	0	0	3	0	0	0	0	0	0	0	0	0
Hodgeman...........	0	0	6	0	0	0	0	0	0	0	0	0
Jackson............	0	0	0	0	1	1	1	0	0	0	0	0
Jefferson..........	0	0	0	0	4	0	0	0	0	0	0	0
*Jewell.....												
Johnson............	0	0	2	0	0	0	0	0	0	0	0	0
*Kearny............												
Kingman............	0	0	1	1	0	0	0	0	0	0	0	0
Kiowa..............	0	0	0	0	0	0	0	0	2	0	0	0
Labette	1	1	0	0	0	0	0	0	0	0	0	0
†Lane												

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.	
	Cases.....	Deaths...	Cases.....	Deaths...	Cases.....	Deaths...	Cases.....	Deaths...	Cases.....	Deaths...	Cases.....	Deaths...
Leavenworth	0	0	1	0	0	0	1	0	0	0	0	0
*Lincoln												
†Linn.............												
†Logan...........												
Lyon............	0	0	0	0	1	0	1	0	0	0	1	0
Marion...........	0	0	4	0	0	0	0	0	0	0	0	0
Marshall.	0	0	1	0	0	0	1	0	0	0	0	0
*McPherson........												
Meade...........	1	1	0	0	0	0	0	0	0	0	0	0
†Miami...........												
Mitchell..........	0	0	2	0	0	0	0	0	0	0	0	0
Montgomery	0	0	2	0	2	0	0	0	7	0	0	0
Morris...........	1	0	7	0	0	0	0	0	0	0	0	0
Morton...........	1	0	0	0	0	0	0	0	0	0	0	0
Nemaha	0	0	3	0	0	0	0	0	0	0	0	0
*Neosho..........												
Ness.............	1	1	0	0	0	0	0	0	0	0	0	0
Norton...........	1	0	0	0	0	0	0	0	0	0	0	0
Osage	1	1	1	1	0	0	0	0	0	0	0	0
Osborne..........	7	0	1	0	0	0	0	0	0	0	0	0
Ottawa	2	0	0	0	0	0	0	0	0	0	0	0
Pawnee...........	2	0	0	0	0	0	0	0	0	0	0	0
Phillips	0	0	4	1	1	0	0	0	0	0	0	0
Pottawatomie ...	1	0	1	0	0	0	0	0	0	0	0	0
Pratt............	0	0	6	0	0	0	0	0	0	0	0	0
†Rawlins..........												
†Republic.........												
Reno	0	0	0	0	0	0	1	0	0	0	0	0
Rice.............	0	0	8	1	0	0	0	0	1	0	0	0
*Riley												
Rooks	0	0	0	0	0	0	1	0	0	0	0	0
†Rush												
†Russell..........												
Saline............	1	1	0	0	0	0	0	0	0	0	0	0
†Scott............												
*Sedgwick												
Seward	0	0	0	0	0	0	0	0	1	0	0	0
Shawnee	1	1	2	0	2	0	0	0	0	0	0	0
†Sheridan........												
Sherman.........	0	0	6	0	0	0	0	0	0	0	0	0
*Smith												
Stafford..........	0	0	6	0	0	0	1	0	0	0	0	0
‡Stanton												
†Stevens												
Sumner...........	0	0	2	0	0	0	5	0	0	0	0	0
Thomas	0	0	3	0	0	0	1	0	0	0	0	0
Trego												
Wabaunsee......	0	0	0	0	5	0	0	0	0	0	0	0
*Wallace												
Washington......	0	0	2	0	0	0	1	0	0	0	0	0
†Wichita												
Wilson	2	0	6	1	2	0	0	0	1	0	0	0
Woodson.........	1	0	3	0	0	0	0	0	0	0	0	0
†Wyandotte......												
Cities:												
*Atchison												
*Fort Scott.....												
Kansas City....	10	5	23	4	1	1	1	0	12	0	20	0
Leavenworth..	0	0	0	0	1	0	1	0	0	0	0	0
Parsons	5	1	3	0	2	1	0	0	0	0	0	0
Topeka	4	4	14	1	11	0	1	0	0	0	0	0
*Wichita												
State Institutions,	13	3	0	0	0	0	0	0	0	0	1	0
Totals	71	31	209	32	47	7	32	2	29	0	22	0
For August, 1905...	90	45	276	43	66	9	70	1	113	1	12	1

* No report. † No contagious diseases in county. ‡ No health officer.

Rule Governing Cold Storage of Poultry, etc.

After an exhaustive investigation of the literature on the subject of the cold storage of undrawn poultry and game, together with personal experience and clinical observation by a large number of physicians with whom the secretary has come in contact, the conclusion was arrived at that the sale of such product in Kansas was not only a menace to the health of the citizens of our state, but contrary to the law as found in sections 2277 and 2325, in that such meat products were unwholesome and tainted with the gases and ptomaines incident to putrefactive changes of the intestinal contents.

In accordance with this conviction, the State Board of Health, at its quarterly meeting held September 14, passed a rule prohibiting the sale of cold-storage undrawn poultry, game, and fish, and instructed the secretary to cause the same to be published in the official publication of the Board.

That all parties interested might have due notice, the following letter containing said rule was mailed to all packing-houses, transportation companies conducting dining-car or hotel service, and such cold-storage firms doing business within the state of Kansas whose names and addresses we could get:

KANSAS STATE BOARD OF HEALTH,
TOPEKA, September 18, 1906.

DEAR SIRS—The following rule was adopted by the State Board of Health at its quarterly meeting held September 14, 1906:

"The sale at retail within the state of Kansas, for human food, of any domestic or wild fowl, game or fish that has been kept in cold storage with their entrails, crops and other offensive parts undrawn is prohibited. The service as food within the state of Kansas of any such domestic or wild fowl, game or fish is also prohibited."

This rule is founded on sections 2277 and 2325 of the General Statutes of 1901, and will be strictly enforced after its publication in our official bulletin, the Bulletin of the State Board of Health.

Investigations have clearly proven that poultry kept in cold storage undrawn becomes in a short time unwholesome and often tainted, and, in many instances, before reaching the consumer actual putrefactive changes have set in in the tissues themselves. Numerous instances have been recorded of serious cases of ptomaine poisoning, which, with other evidence in possession of the Board, gives sufficient cause for the enactment of the above rule. Very truly yours, KANSAS STATE BOARD OF HEALTH.

S. J. CRUMBINE, M. D., *Secretary*.

In this connection it will be of interest to quote from the annual report of the dairy and food commissioner of Pennsylvania, which report has just been published. The conclusions drawn from the investigations of that department are contained in the following official utterances:

"The oft-discussed question as to the healthfulness of poultry that was not drawn at the time of killing, and which was kept in cold storage for days, months, and even years, before it was sold to the consumer, was again brought to the attention of the dairy and food commissioner during the past year with more or less frequency. It developed through investigation, and a series of correspondence, that fowls are killed sometimes without bleeding, packed before entirely dead, and frozen solid without removal of entrails. It is needless to state that the presence of undigested food and excrementitious substances in such fowls must, necessarily, taint the flesh and assist in its decomposition, and particularly because of the fact that the frost is either wholly or partially removed after the fowls leave the cold-storage chamber and before they reach the consumer. Bacterial action and ptomaine poisoning quickly appearing with the actual putrescent condition which already exists, the danger to life is unquestionably a serious one. This question is one that certainly demands consideration at the hands of our next legislature."

This is largely in accord with the results of experimental work done by the United States Department of Agriculture, whose opinions are contained in bulletin No. 144 of that department, which are as follows:

"Under precisely the same conditions of temperature and humidity, drawn fowls will keep from twenty to thirty days longer than those not drawn. The presence of undigested food and of excrementitious substances in animals which have been killed most certainly favors tainting of the flesh and general decomposition. The viscera are the first parts to show putrescence, and allowing these to remain within the body cannot do otherwise than favor infection of the flesh with bacteria and ptomaines, even if osmosis does not actually carry putrid juices to contiguous tissues. Hunters know the value of drawing birds as soon as possible after they have been shot, in order to keep them fresh and sweet and to prevent their having a strong intestinal flavor.

"That the opening of the body of an animal and exposing the internal surfaces to the air may have some influence of itself in hastening putrefaction is admitted, but when the process of drawing is properly conducted this secondary objection to its immediate performance may be entirely set aside. Absolute cleanliness should be maintained throughout the operation, and if the entrails are torn and their contents allowed to come in contact with the flesh of the animal, its interior should be at once washed out with clean cold water and afterwards with a solution of common salt, and the carcass hung up until thoroughly dry."

Some Kitchen Tests to Detect Adulteration in Common Foods.

By PROF. E. H. S. BAILEY, Chemist State Board of Health.

The subject of food adulteration is to-day receiving more attention than at any previous time. The people are becoming better informed, so that they are less liable to be imposed upon by unscrupulous manufacturers and dealers. This subject, however, should be considered in a sane and practical way. No permanent improvement from present conditions will be secured by the sensational misrepresentations of some popular authors of the day.

There seems to be some misunderstanding as to what food adulteration really is. The food law of Kansas, (General Statutes of 1901) reads as follows:

> "§ 2325. Any article shall be deemed to be adulterated, . . . in the case of food: *First*, if any substance or substances have been mixed with it so as to lower or depreciate or injuriously affect its quality, strength, or purity; *second*, if any inferior or cheaper substance or substances have been substituted wholly or in part for it; *third*, if any valuable or necessary constituent has been wholly or in part abstracted from it; *fourth*, if it is an imitation of or is sold under the name of another article; *fifth*, if it consists wholly or in part of a diseased, decomposed, putrid, infected, tainted or rotten animal or vegetable substance or article, whether manufactured or not, or in case of milk, if it is the product of a diseased animal; *sixth*, if it is coated, colored, polished or powdered, whereby damage or inferiority is concealed, or if by any means it is made to appear better or of greater value than it really is; *seventh*, if it contains any added substance or ingredient which is poisonous or injurious to health, or any deleterious substance not a necessary ingredient in its manufacture; provided, that the provisions of this act shall not apply to mixtures or compounds recognized as ordinary articles of food, if the same be distinctly labeled as mixtures or compounds, and are not injurious to the health, and contain no ingredient not necessary to the preparation of a genuine article of such mixtures or compounds, and from which no necessary ingredient in its preparation is eliminated."

A study of these definitions of adulteration will show that the adulteration of food is often practiced with the direct object of making it cost less to produce, and therefore to assure the manufacturer a greater percentage of profit. With this thought in mind, then, the statements of certain manufacturers that changes are produced in the food in order to improve the product should be carefully considered before they are accepted. This statement, however, is not intended to include such products as are plainly marked "compounds," and which are sold at a low price, with the distinct understanding on the part of the purchaser that he is getting a cheap article for his money; he understands that he is getting cotton goods and paying a cotton price, and that he is not paying for an article that is all wool and a yard wide.

A preservative added to a food is an adulteration, because it is an outside substance and neither a food nor a condiment. It is an entirely different question whether the food thus preserved is wholesome. Foods are also often misbranded. A commercial sausage may contain a considerable amount of starch which is added in order to allow the use of more fat or water to the product. This is not injurious, but the customer buys the product at a high price believing that he is getting genuine sausage and nothing else.

On account of the frequent use of adulterants, some simple tests are here given. These tests can be performed without any special chemical knowledge by carefully following the directions given. The complete details of the processes are given in the recent article by Bigelow and Howard, in Bulletin No. 100, United States Department of Agriculture, Bureau of Chemistry. From this excellent publication many of the following processes are taken.

APPARATUS AND CHEMICALS REQUIRED FOR THE KITCHEN TESTS.

In addition to the ordinary kitchen dishes and utensils, the following will be required: A glass funnel about three inches in diameter; some white, cut filter-paper about five inches in diameter; and a medicine dropper. The chemicals required are: A 4-ounce bottle of strong hydrochloric (muriatic) acid; a 4-ounce bottle of aqua ammonia; quarter of an ounce of ferric alum; a 4-ounce bottle of alcohol; a 1-ounce bottle of tincture of iodin; a quarter-pound of fullers' earth; half-ounce of logwood chips; and a few square inches of turmeric paper. All of these can readily be obtained at any drug-store.

I.—*Canned Vegetables.*

Vegetables put up by reputable manufacturers who think it worth while to keep a good brand on the market are usually of good quality and wholesome. Sometimes, however, we find coloring matter and preservatives present. Notice the appearance of the tin can containing canned vegetables or fruit. If it is convex instead of concave at the ends, and if when water is poured on the end of the can and the can is punctured bubbles of gas come out through the water, the contents has begun to ferment and are not fit for use.

The only coloring matter usually found in canned vegetables is copper, which is added to produce a natural green color. This is more liable to be found in peas and beans. It has also been frequently used in pickles. To test for copper: Mash some of the sample with a stiff spoon, and put a teaspoonful of the pulp in a teacup, with three times as much water. With a medicine-dropper add thirty drops of hydrochloric acid, and set the cup in a pan of boiling water on the stove. Drop a bright two-penny nail in the mixture, and keep the water in the pan boiling for about twenty minutes, taking care to stir the solution occasionally with a splinter. Pour out the contents of the cup, rinse off the nail and examine it. If any appreciable quantity of copper is present in the food the nail will be plated red by the copper.

The preservatives most commonly used in canned vegetables are borax, sodium benzoate, and salicylic acid. Sodium sulfite is also sometimes added to bleach the product and to act as a preservative. Saccharin, which acts slightly as a preservative, is used with such vegetables as sweet corn, as a sweetening agent.

To detect borax or boric acid, mash a sample with a tumbler used as a pestle in a tea saucer, add a few teaspoonfuls of water, and strain through a cloth, putting the wet, folded cloth in the funnel. Collect about a teaspoonful of the liquid that comes through the filter in a sauce-dish, and add to this four drops of hydrochloric acid. Dip into this solution a piece of yellow turmeric paper about an inch square, and then dry this paper by placing it in a clean saucer over a teakettle of boiling water. If borax is present, the yellow paper will become cherry-red when dry, and if a drop or two of ammonia be put upon it when cold, the color changes to a greenish black.

To detect sodium benzoate or benzoic acid, macerate and filter the sample as above, using a somewhat larger quantity. By squeezing the bag gently, obtain two ounces of the liquid. Place this solution in a narrow bottle holding about five ounces. The ordinary quinine bottle of the druggist is convenient to use for this purpose. Add a quarter of a teaspoonful of cream of tartar and about three tablespoonfuls of chloroform, and mix thoroughly with a splinter. Do not shake too vigorously or the chloroform will not separate readily from the rest of the liquid. Pour the mixture into a tumbler, and after the chloroform layer has settled to the bottom of the tumbler, with a medicine-dropper take out all the clear chloroform possible, and place one-half of it in a glass sauce-dish and the remainder in a tall five-ounce bottle containing about a tablespoonful of water. Set the dish on the outside of a window ledge, close the window, and allow the chloroform to evaporate. In cold weather the sauce-dish should be placed in a pan of hot water before being placed on the window ledge. When the chloroform has evaporated, if benzoic acid is present it will be seen in the bottom of the dish in small, flat crystals. If the dish is warmed the peculiar odor of gum benzoin can be readily recognized.

To test for salicylic acid, use the other half of the chloroform solution, which was reserved in the bottle, and add to it a piece of iron alum about as large as the head of a pin. Shake the mixture and allow the chloroform to again settle to the bottom of the bottle. If salicylic acid is present, the upper layer of the liquid, or the line separating the two liquids, will be of a purple color.

Saccharin is used in the place of sugar to sweeten various food products. It is made from coal-tar and is about 500 times as sweet as ordinary sugar. To detect this substance, the sample of food is extracted with chloroform as described in the method for detecting sodium benzoate, and the chloroform solution is allowed to evaporate in a glass dish in the open air. If a considerable amount of saccharin is present the residue left in the dish will have an intensely sweet taste.

II.—*Canned Fruit.*

There is very little excuse for the use of preservatives, and none at all for the use of artificial coloring matters in canned fruits. The preservatives mentioned under canned vegetables are those more commonly used, and the methods for their detection given in the previous section may also be applied to canned fruits.

III.—*Jams, Jellies, and Preserves.*

There is no class of food products, with the exception of spices, so commonly adulterated and sophisticated as jams and jellies. The basis for the cheap jellies is often the pomace or refuse from the cider-mill, the sweetening is glucose or corn syrup, the coloring matter is a coal-tar dye, and the use of a preservative is almost always necessary. Starch is also often used as a filler or gelatinizing agent.

To detect a coal-tar or anilin dye, mix a few teaspoonfuls of the jam or jelly with some water and filter through filter-paper. The filter-paper should be folded across the middle, and again at a right angle to this fold. Place in the funnel so that there shall be three thicknesses on one side and one on the other. Moisten the paper with water to hold it in place. Add a few drops of hydrochloric acid to the filtered solution of the jelly, and place it in a teacup in a pan of boiling water on the stove. Boil a small piece (about an inch square) of white woolen cloth or nun's veiling with a little soap, and, after rinsing, place it in the colored solution to be tested. After heating for ten minutes, take out the cloth and rinse it in clear water. If the cloth is not colored, the experiment may be discontinued, as artificial coloring matters are not present. If, however, the cloth is colored, to confirm the test, heat the cloth in a teacup in clear water containing about a teaspoonful of ammonia. This will dissolve the anilin color out of the cloth, but will have little effect on a natural fruit color. Take out the piece of cloth and add enough hydrochloric acid to the contents of the cup so that the solution shall not smell of ammonia. Put into this solution a new piece of washed woolen cloth, and heat again in a pan of water. If an anilin dye is present, the cloth will be dyed, and, after heating a short time, may be taken out and rinsed in clear water. This method of testing may also be applied to tomato catsup, which is very frequently artificially colored.

If considerable starch paste has been added to a jelly, it may be detected by adding to the cold filtered solution a few drops of tincture of iodin. The production of an intense blue color indicates starch. Notice that this color may be modified by any dye that is present in the sample examined.

IV.—*Flavoring Extracts.*

The extracts in most common use are those of lemon and vanilla. Extracts of lemon, according the United States Pharmacopœia, should contain five per cent. of oil of lemon, and about eighty-five per cent. of alcohol is required to keep this in solution. Much of the extract of lemon on the market contains so little oil of lemon that it can with difficulty be measured. The oil is also often replaced by some other essential oil, as that of lemon grass. To hold the small quantity of oil of lemon in solution, a twenty-five or thirty-per-cent. alcohol is often used. The yellow color of this product is produced by the use of a yellow anilin dye.

As oil of lemon is held in solution by alcohol, to test the character of the extract, add to a teaspoonful of the sample, in a tumbler, three times as much water. If the sample is genuine the oil of lemon will be thrown out of solution and the liquid will become turbid. If the solution remains perfectly clear on the addition of the water, the extract is of a very poor quality.

Extract of vanilla, if genuine, is made by exhausting vanilla beans with alcohol. Frequently Tonka beans are in part or wholly substituted for the vanilla beans. The coloring matter in the artificial extract is usually caramel, or burnt sugar and artificial vanillin is added to strengthen the ordinary product. To detect caramel, shake the bottle containing the extract, and observe the foam on the top of the liquid. If the extract is pure the foam is colorless; but if caramel has been added, there is a brownish color at the point of contact of the bubbles until the last bubble disappears.

As pure extract of vanilla contains considerable resin, which is held in solution by the alcohol, a test may be made for this as follows: Evaporate about two tablespoonfuls of the extract in a saucedish placed over a teakettle of boiling water. When one-third of the liquid has evaporated off, pour the residue into a tumbler and dilute with water to the original volume. If the liquid is turbid, and the resin separates as a brownish substance, the extract is genuine. If, on the other hand, the liquid remains clear after dilution, though of course of a brown color, this indicates that it is artificial.

V.—*Vinegar.*

Vinegar is usually made from cider, wine, malt, or spirits. Much of the so-called "white-wine vinegar" is made from spirits or alcohol. One method of detecting the source of a vinegar is to rinse out a tumbler with the sample and allow it to stand over night. The odor of the residue will enable one who is accustomed to these odors to detect the source of the vinegar. Another method is to evaporate some of the vinegar in a tea saucer over a teakettle of boiling water. The odor and taste of the residue left in the saucer are characteristic. From spirit vinegar the residue is very small and practically odorless.

To detect the addition of caramel to a vinegar, add about two teaspoonfuls of fullers' earth to two ounces of vinegar, and filter into a tall bottle of about five ounces capacity. The first part of the filtrate should be poured through the filter a second time. Compare the color of this filtrate with the color of a sample of the vinegar which has not been filtered. This may be conveniently poured into another bottle of the same size as that containing the filtered sample. If much of the coloring matter has been removed by filtration, this indicates that the sample has been colored with caramel.

VI.—*Sugar; Honey.*

Artificial honey is sometimes made by the use of common sugar and glucose, which is flavored to resemble the natural product. To detect the latter, add to a somewhat dilute solution of honey at least an equal volume of alcohol. The production of a white precipitate of dextrose, which finally settles to the bottom of the glass, indicates the presence of glucose. This test may also be applied to a solution of candy. Glucose is not, however, properly considered an adulterant in candy. To detect starch in candy, boil some of the solution, and after cooling add a few drops of a tincture of iodin. The production of an intense blue color indicates starch. White sugar, especially granulated, usually contains a little blue coloring matter, such as ultramarine. This may be detected by making a strong solution of sugar in a tumbler and allowing it to stand for several days. The blue coloring matter will finally settle to the bottom of the glass. If saccharin is added to candy or a food product, it may be detected by the test given under "Canned Vegetables."

VII.—*Spices and Condiments.*

Spices, especially those which are ground, are very often adulterated. If a sample has not a strong spicy odor and taste, this is an indication of adulteration. Most of the adulterants of spices are of a starchy character; many spices also naturally contain starch. This is not the case however with cloves, mustard, and cayenne, so these may be tested for starch as follows: Stir a half-teaspoonful of the spice into half a cup of boiling water, and heat in a pan of water on the stove for a few minutes. Cool the mixture, and dilute with water so that the solution shall not be very strongly colored. Add a few drops of tincture of iodin and the production of a blue color indicates starch.

VIII.— *Baking Chemicals.*

Baking-powder.—As the statement that appears on the label of a baking-powder can is often deceptive, it may be of interest to prove whether a sample contains alum or not. To test for alum, make a fresh extract of logwood, either from the chips or the solid extract, by treating with water and pouring away the first and second extracts. Use the third extract obtained and allow it to settle. Place two teaspoonfuls of baking-powder in a teacup and add to it four teaspoonfuls of cold water. With a medicine-dropper add twenty drops of extract of logwood to the mixture and stir with a splinter. Place the teacup in a pan of hot water on the stove and examine the color after two hours. If the baking-powder contains alum, or a compound of aluminum, a distinct lavender color will be produced, but if this substance is not present in the sample, only a dirty brown or pink color will appear. It is well to make a test at first on samples of known composition, so as to recognize the colors accurately.

Cream of Tartar.—The cream of tartar on the market is frequently adulterated with acid calcium phosphate, alum, and even plaster, and starch. A simple test to determine the purity of the sample is to pour boiling water upon it and stir. Pure cream of tartar will dissolve completely, but many of the adulterants will only partially dissolve. When cold, the cream of tartar will crystallize out in very characteristic crystals. To detect starch, add to a little of the cooled solution a few drops of tincture of iodine. The production of a blue color indicates that starch or flour is present.

IX.—*Tea and Coffee.*

There is hardly any adulterated tea on the market, although there are some very poor grades. Ground coffee is very often adulterated. Some simple tests for adulterants may be made. If ground coffee is dropped into a glass of cold water, the genuine coffee will float, and will not discolor the water for several minutes. Most of the adulterants sink to the bottom and leave a brown trail in the water. But little coffee is contained in the so-called coffee substitute. The proportion of coffee may be ascertained approximately by dropping into cold water, as very few coffee substitutes will float.

Many of the substitutes are of a starchy nature. Starch may be tested, for the ordinary infusion prepared for the table, when cold, by diluting it until it is not too strongly colored, and then testing by tincture of iodin.

X.—*Dairy Products.*

Milk, butter, ice-cream and cheese are sometimes adulterated. Milk is adulterated by adding water, coloring matters, and preservatives. When water is added to milk, this changes the natural color, and the milk becomes bluish white. If a yellow coal-tar dye has been added to the milk to restore the natural color when watered, this may be detected by adding an equal quantity of strong hydrochloric acid to a sample of the milk and afterwards heating. A pink coloration indicates the presence of the dye.

Another test is to allow the milk to stand in a tumbler for about twelve hours, or until the cream rises, and notice the color of the cream and of the milk layer. If the lower layer is of a yellow color, about the same as that of the cream, an artificial color is indicated.

If milk does not turn sour in the usual time, the presence of a preservative is indicated. Baking soda is sometimes added to correct the acid of the milk. If an appreciable quantity of this substance has been used, the milk, after standing a few hours, will have a slightly alkaline reaction; that is, it will change a piece of yellow litmus paper to an orange-red color.

Other preservatives are sometimes used, but that which is the most common is formaldehyde, because a little goes a long ways as a preservative. To detect this substance, place four tablespoonfuls of the sample in a teacup, with an equal quantity of strong hydrochloric acid, and a piece of ferric alum, about the size of the head of a pin. After mixing, by giving the contents of the cup a rotary motion, place the cup in a pan of boiling water on the stove, and allow to stand for five minutes. If formaldehyde is present the mixture will be of a purple color. A similar test may be made for formaldehyde in ice-cream, although if starch is present in the cream this may modify the shade of the purple.

The substitutes for genuine butter are "process" or "renovated" butter, and oleomargarin or "butterin." Process butter is made by treating old or rancid butter by melting, skimming, and allowing the brine and curd to sink to the bottom, whence it is drawn off. Air is then blown through the melted butter-fat, and the product is churned with milk or cream. Oleomargarin is made from various mixtures of oleo-oil, cottonseed-oil, neutral lard, and milk or butter.

The spoon test may be used to distinguish fresh butter from renovated butter and oleomargarin. A lump of butter the size of a hickory-nut is placed on a large iron spoon and heated over the flame of a small kerosene or alcohol lamp or over a gas flame. Fresh butter will melt quietly, with many small bubbles throughout the mass, which produce much foam; oleomargarine or process butter will sputter and crackle, like hot fat containing water, and produce but little foam.

To make the "milk test," as it is called, place about two ounces of sweet milk in a wide-mouthed bottle, which is set in a pan of boiling water on the stove. When the milk is hot, add a teaspoonful of butter, and stir with a splinter until the fat is melted. Place the bottle in a pan of ice-water and stir continually while the fat is solidifying. If the sample is butter, either fresh or renovated, it will solidify in a granular condition and be distributed through the milk in small granular particles. If, on the other hand, the sample is oleomargarin, it solidifies practically in a single lump, so that it may be lifted from the bottle with the stirrer.

XI.—*Eggs.*

Probably the best method for testing the freshness of eggs is the time-honored one of candling. The egg is held between the eye and a bright light. A fresh egg shows a perfectly uniform rose-colored tint, while if it is not fresh there will be numerous dark spots.

In packed eggs there is a tendency for the white and yolk to slightly intermingle along the line of contact. Packed eggs also are apt to adhere to the shell on one side.

XII.—*Meat Products.*

The preservatives most commonly used in meat products are borax and boric acid and sodium sulfite. The latter chemical also assists in the retention of the natural red color of the meat. If the meat keeps an exceptionally long time without a tendency to spoil, or if it retains its red color, the presence of preservatives is suspected.

The method of testing for borax, which has already been described under "Canned Vegetables," may be used in testing meat products. The meat must be finely divided, and should be warmed with water for some time, and the liquid which is filtered off should be tested.

A Survival of the Unfit.

The superintendent of schools of one of our towns writes that "our village schools have over fifty scholars during the summer and fall terms. The water-closets (privies) are built onto the building. We cannot use enough disinfectants to kill the odor. Now, I think the schools should not be allowed to continue until these are removed from the building—that an injunction should be issued against it."

That village needs to be taught the rudiments of decent living. There are undoubtedly thrifty farmers there who would quickly be moved to make changes to insure the better condition of their pigs and cows, and thereby increase their cash receipts. And still they should see that such a change as their superintendent suggests would really pay still better. The most valuable investment of the family and of the state is the oncoming crop of young people. Their physical condition, their health, should be the first consideration; their moral and intellectual education the next.

Every summer there come into this state thousands of children to recuperate from the ill effects of school-room life. Many are pale, without appetite, and suffering from the incipient stages of *stunting*—mental and physical dwarfing. A two or three months' wandering in our pure outdoor air makes a wonderful change for the better in them. And yet the most of these children come from schoolrooms fairly well ventilated. They have suffered the results of breathing air polluted more or less by rebreathing. Every time they draw a breath of air they take in some which has already been within other children's lungs.

But what of children who have to breathe air not only thus contaminated, but polluted also by the gases which come from the putrefaction of masses of matter which has been excreted from human intestinal tracts. How continuously the deleterious results of breathing it have appeared, we have found in investigating schools which had this same vile arrangement. Since then our state superintendent has faithfully and efficiently been teaching what is right and decent in school life. This instance of the survival of the extremely unfit is a surprise. It is to be hoped that that injunction or an awakening of this village may shut up that school until a little reconstruction makes it possible for those children to breathe air which is at least half decent. Courts have issued injunctions for the restraint of conditions not one tithe so detrimental as this.—*Maine Bulletin.*

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No. 10. OCTOBER, 1906. VOL. 2.

Government inspection inspects.
The packers' products taste better.
Have you tried the kitchen tests?

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VITAL STATISTICS

Reported to the Kansas Board of Health for September, 1906.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Allen	0	0	8	8	3	0	0	0	0	0	0	0
*Anderson												
Atchison	1	1	0	0	0	0	0	0	0	0	0	0
*Barber												
Barton	1	1	2	0	0	0	0	0	0	0	0	0
Bourbon	2	1	3	2	1	1	0	0	0	0	0	0
†Brown												
Butler	0	0	0	0	10	2	2	0	0	0	0	0
Chase	0	0	0	0	0	0	2	0	0	0	0	0
Chautauqua	0	0	0	0	0	0	9	0	0	0	0	0
Cherokee	4	4	9	4	9	2	0	0	0	0	0	0
Cheyenne	0	0	1	0	0	0	0	0	41	0	0	0
†Clark												
†Clay												
Cloud	0	0	2	0	2	0	0	0	1	0	0	0
Coffey	1	1	0	0	0	0	0	0	0	0	0	0
†Comanche												
Cowley	2	2	0	0	0	0	0	0	1	1	0	0
Crawford	1	1	5	5	7	3	0	0	0	0	0	0
Decatur	0	0	8	2	0	0	2	0	0	0	0	0
Dickinson	0	0	0	0	2	1	2	0	0	0	0	0
Doniphan	1	1	2	1	2	0	0	0	0	0	0	0
Douglas	0	0	4	0	56	4	0	0	0	0	0	0
Edwards	1	1	4	2	3	2	0	0	0	0	0	0
Elk	0	0	0	0	1	0	0	0	0	0	0	0
†Ellis												
*Ellsworth												
Finney	1	1	0	0	0	0	0	0	0	0	0	0
Ford	0	0	30	0	0	0	0	0	0	0	0	0
Franklin	0	0	3	3	0	0	0	0	0	0	0	0
Geary	1	1	5	1	0	0	4	0	0	0	0	0
*Gove												
Graham	0	0	4	1	0	0	0	0	0	0	0	0
Grant	0	0	17	1	0	0	0	0	0	0	0	0
Gray	0	0	2	0	0	0	0	0	0	0	0	0
Greeley												
Greenwood	0	0	2	0	13	1	0	0	0	0	0	0
*Hamilton												
*Harper												
Harvey	0	0	1	0	0	0	3	0	0	0	0	0
Haskell	0	0	3	0	0	0	0	0	0	0	0	0
Hodgeman	0	0	6	0	0	0	0	0	0	0	0	0
Jackson	1	1	2	0	0	0	0	0	0	0	0	0
Jefferson	0	0	0	0	50	0	0	0	0	0	0	0
*Jewell												
Johnson	1	1	3	0	0	0	0	0	2	0	0	0
*Kearny												
Kingman	0	0	2	0	1	0	0	0	0	0	0	0
†Kiowa												
Labette	1	1	3	0	0		0	0	0	0	0	0
Lane	0	0	7	0	0	0	0	0	0	0	0	0
Leavenworth	1	1	0	0	1	0	0	0	0	0	0	0
†Lincoln												
†Linn												
Logan	0	0	0	0	0	0	1	0	0	0	0	0
Lyon	7	5	33	3	6	1	1	0	0	0	1	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Marion...........	0	0	2	0	4	0	2	0	0	0	0	0
Marshall.	2	2	1	0	3	1	0	0	0	0	0	0
*McPherson.......												
Meade...........	0	0	4	0	0	0	0	0	0	0	0	0
†Miami..												
Mitchell..........	2	2	4	2	0	0	0	0	0	0	0	0
Montgomery.....	1	1	2	3	10	0	0	0	1	0	0	0
*Morris...........												
†Morton..........												
Nemaha	2	2	2	1	0	0	5	0	0	0	0	0
*Neosho..........												
Ness........... ..	1	1	0	0	0	0	0	0	0	0	0	0
Norton...........	3	3	3	3	0	0	0	0	0	0	0	0
Osage	0	0	2	1	2	0	0	0	0	0	0	0
*Osborne.........												
Ottawa	1	0	1	0	0	0	0	0	0	0	0	0
Pawnee...........	0	0	3	0	0	0	0	0	0	0	0	0
Phillips	1	1	1	0	0	0	0	0	0	0	0	0
Pottawatomie ...	1	1	0	0	0	0	0	0	0	0	0	0
Pratt............	4	0	6	0	0	0	0	0	0	0	0	0
*Rawlins..........												
Republic...	2	0	5	0	0	0	0	0	0	0	0	0
Reno	0	0	0	0	12	2	1	0	0	0	0	0
*Rice.............												
Riley............	3	0	2	1	5	0	4	0	0	0	0	0
Rooks............	1	1	1	1	1	0	0	0	0	0	0	0
Rush............	2	0	1	0	0	0	0	0	0	0	0	0
†Russell...........												
Saline...........	1	1	0	0	0	0	0	0	0	0	0	0
†Scott.............												
Sedgwick	0	0	0	0	2	0	0	0	0	0	0	0
†Seward												
Shawnee.........	0	0	4	0	7	0	0	0	0	0	0	0
Sheridan........	0	0	1	0	0	0	4	0	0	0	0	0
Sherman.........	0	0	4	0	0	0	0	0	0	0	0	0
*Smith												
Stafford..........	0	0	7	0	0	0	0	0	0	0	0	0
‡Stanton												
Stevens	1	1	0	0	0	0	0	0	0	0	0	0
Sumner...........	1	1	3	1	1	0	2	0	1	0	0	0
*Thomas												
*Trego												
†Wabaunsee......												
Wallace	2	0	0	0	0	0	0	0	0	0	0	0
Washington......	0	0	13	0	0	0	0	0	0	0	0	0
Wichita	0	0	3	0	0	0	0	0	0	0	0	0
*Wilson..........												
Woodson.........	0	0	5	0	0	0	0	0	0	0	0	0
Wyandotte......	0	0	0	0	2	0	0	0	0	0	0	0
Cities:												
*Atchison												
Coffeyville.....	0	0	0	0	5	1	1	0	1	0	0	0
*Fort Scott.....												
Kansas City....	14	14	50	7	4	0	3	1	0	0	14	0
Leavenworth..	2	2	1	1	3	0	0	0	0	0	1	0
Parsons........	7	3	3	1	5	1	5	0	0	0	0	0
Topeka	3	3	13	4	28	0	1	0	0	0	1	0
Wichita.......	1	1	0	0	0	0	0	0	5	0	0	0
State Institutions,	18	1	4	1	0	0	0	0	0	0	0	0
Totals	103	65	322	54	261	22	55	1	53	1	17	0
For Sept., 1905. ..	91	62	298	51	226	11	106	0	62	1	0	0

* No report. † No contagious diseases in county. ‡ No health officer.

Notes Picked up by the Wayside.

Cheerful optimism is the world's axle-grease.

A contented spirit is the sweetness of existence.

A pound of pluck is worth a ton of luck.— *Garfield.*

Set your shoulder to the world's wheel.—*Havelock Ellis.*

Write in your heart that every day is the best day of the year.—*Emerson.*

It is hard to fail, but worse never to have tried to succeed.—*Roosevelt.*

There were 261 cases of diphtheria in 32 counties in September: FUMIGATE.

There were 299 cases of typhoid fever in 53 counties in September: BOIL.

There were 53 cases of smallpox in 8 counties in September: VACCINATE.

Look to the essence of a thing, whether it be a point of doctrine, of practice, or of interpretation.—*Marcus Aurelius.*

Government inspection is a success. We have seen, and believe. Therefore, let it be known that the products of the Kansas packers are, like Cæsar's wife, "above suspicion."

The personal cleanliness of patients, nurse, and attendants, and the sanitary disposal of the excretions of the patient, are of *first* importance in the proper management of contagious and infectious diseases; quarantine, isolation and post-fumigation but secondary.

When good Jack Spratt now eats the fat,
And his wife devours the lean,
The kind of fodder that they eat
On the label can be seen.—*Price Current.*

Every package of food of indifferent quality discredits high-grade products. The bottle of cheap catsup doctored with drugs and paints, and loaded with spices, discredits and lessens the demand for the best catsup. Every can of poor peas hurts the standing of the higher grades. We do not believe in letting the consumers indifferent to quality, and who cry out for low cost, dominate the food industry. The time for reform has come, and let it be thorough, even if it forever drives out of the market a good many humbug and poor food products.—*American Grocer.*

ANALYSES OF FOOD PRODUCTS.

No. IV.

The analysis of twenty-one packages of butter collected in different parts of the state, representing twenty-one different creamery companies, will be of interest to consumers, first, as such analyses indicate the purity of all these butters; and second, a majority of them are short in weight, many of them sufficiently short as to indicate fraudulent intent. The explanatory letter of our chemist, Professor Willard, which accompanies this report, is an interesting document and should be read by every health officer in the state:

MANHATTAN, KAN., September 20, 1906.

Dr. S. J. Crumbine, Secretary State Board of Health:

DEAR DOCTOR—In accordance with your request, I present the following report on the samples of butter submitted by you and other members of the Board. I shall preface the analytical results with some general consideration of the subject of butter and its adulterations.

Whether we consider its enormous total production, its great nutritive value, its delicate flavor when in its best state, or its high price per pound, butter is an article of more than ordinary interest and importance. The establishment of creameries has doubtless done much to raise the general average of the quality of butter on the market, though the best is still produced in private dairies. The consolidation of the industry, involving the mixing of cream from hundreds or even thousands of sources, must be attended by a certain sacrifice of the best, while giving uniformity to each of the several grades of the output.

The aggregation of capital in creamery companies, the competition among them and the dependence of the public upon them produce a situation that may easily become unsatisfactory to the producer of cream, the consumer of butter, or the manufacturer. The cream producer is paid for butter-fat; the butter consumer buys not only fat but a certain amount of salt, curd, and water. The difference between the weight of butter-fat bought and that of butter made from it constitutes the "overrun," which is the chief source of the profit of the creamery.

It is evident that the temptation to increase the overrun by incorporating as much water as practicable in the butter is very great, and creamery companies have found it profitable to employ chemists to study the means of increasing the water-holding power of butter. A certain small amount of water in butter doubtless improves its consistency, but excess is so well recognized as fraudulent that Congress has named this among its possible adulterants. Congress has not specified the limit permissible, neither has the secretary of agriculture, in his promulgation of food standards, fixed the limit. However, the secretary of agriculture has fixed the maximum water content of renovated butter at 16 per cent., and the internal-revenue service has fixed 15.99 per cent. as the maximum water content for either genuine or renovated butter. The secretary of agriculture has fixed 82.5 as the standard percentage of milk-fat for butter.

TABLE showing results of analyses of samples of butter collected by members of the State Board of Health.

Laboratory No.	NAME OF BRAND AND MANUFACTURER.	Gross weight, in ounces.	Net weight, in ounces.	Moisture.	Curd.	Ash, salt.	Fat.
38	Red Cross Creamery Butter, Topeka Pure Milk Company	16.4	15.3	12.53	1.31	2.87	83.29
39	Parksdale Renovated Butter, Continental Creamery Company	15.8	14.1	12.29	1.04	3.63	83.04
40	College Creamery Butter, Dairy Department	16.4	16.1	11.58	1.35	2.24	84.83
41	Burlington Creamery Butter, Burlington Creamery Company	19.6	15.2	16.03	1.26	1.90	80.81
42	Yellow Rose Creamery Butter, Leavenworth Dairy and Creamery Company	22.2	13.9	12.79	1.35	2.85	83.01
43	Clover Leaf Creamery Butter, Fort Scott Creamery Company	15.9	14.9	11.02	1.45	1.28	86.25
44	H. C. Butter, Hers & Erb Creamery Company	16.3	15.4	11.71	1.16	3.50	83.63
45	Original Acme Brand, Acme Creamery Association	15.8	15.6	12.04	1.45	2.92	83.59
46	Belle Springs Pure Creamery Butter, Belle Springs Creamery Company	16.9	15.8	15.09	1.36	1.16	82.39
47	Cottonwood Valley Creamery Butter, Marion Creamery Company	16.1	15.2	14.69	1.59	3.45	80.27

48	Butter, Cooperative Company's Creamery	16.2	15.2	11.78	1.38	1.00	85.84
49	Butter, Blue Mound Creamery, Sent in by H. M. Barnes	30.6	29.6	14.75	0.79	3.88	80.58
50	Creamery Butter, Flanagan Creamery Company	10.2	8.8	11.27	1.22	1.22	86.29
51	Burlington Creamery Butter, Burlington Creamery Company	17.2	14.2	15.18	1.29	1.98	81.55
52	Shady Grove Brand, Puritan Creamery Company	15.8	15.4	11.70	1.19	2.48	84.63
53	Brookfield Extra Creamery Butter, Swift & Company	16.3	14.7	11.01	1.45	0.99	87.55
54	Carnation Creamery Butter, Hoisington Creamery Company	16.0	15.7	17.64	1.51	1.53	79.32
55	Merritt's Best Creamery Butter, Merritt Creamery Company	16.4	15.3	15.55	1.43	2.90	80.12
56	Shady Brook Butter, Watkins Creamery Company	16.7	15.7	14.20	1.28	2.44	82.08
57	Pure Creamery Butter, Hesston Creamery Company	15.3	14.2	12.53	1.43	4.00	82.04
58	Junction City Creamery Butter, B. F. Engle, proprietor	16.4	15.4	12.66	0.91	1.10	85.33

In the light of the preceding statements we may consider some of the results presented in the accompanying table. The samples were all purchased in the open market, and, with the exception of Nos. 49 and 50, were in the prints ordinarily supposed to be intended to be one pound in weight. One manufacturer, whose attention was called to shortness of weight, coolly defended himself by the plea that he did not sell them by the pound, but by the print. In view of this, it would be well to require every print to bear a statement as to the net weight claimed. The table shows the gross weight of each sample, which includes the wrappings accompanying the butter. The net weights, it will be seen, in all cases except No. 40, are below sixteen ounces. In the cases of Nos. 39, 42, 43, 51, 53, and 57, the weights are below fifteen ounces, and No. 42 is even below fourteen ounces. It must, of course, be conceded that it is impossible to have all prints put out by a creamery equal in weight, but when practically every sample is under weight, it is evident that the general practice of creameries is to make them so.

Study of the table shows how great the variations in composition may be, even in creamery butter. The ash and salt, which is chiefly the salt added to the butter, varies from 0.99 per cent. in No. 53 to 4.00 per cent. in No. 57. The curd ranges between the 0.79 per cent. in No. 49 and the 1.59 per cent. in No. 47. The highest percentage of fat is 87.55, in No. 53; the lowest, 79.32, is found in No. 54. The highest percentage of moisture was found in No. 54, 17 64 per cent., while No. 53, with 11.01, contained the least, No. 43 being a close second.

Turning to the legal relations of these figures, it is seen that in respect to water content these samples show a great improvement over the three submitted last winter. Only two—Nos. 41 and 54—are beyond the 15.99 per cent. permitted by the internal-revenue service. In respect to fat, which is the valuable constituent, nine of the twenty-one are below the standard to a greater or less extent. It will thus be seen that, while there is considerable improvement over the samples previously reported upon, there is still much to be desired in this respect. It may be that the cause of the difference in results is to be found in the difference of season rather than in any change of practice on the part of manufacturers. However, it has come to my knowledge that more attention is being given to avoidance of an illegal percentage of water than heretofore. Doubtless this attention can be stimulated and extended by giving ample currency to the fact that every manufacturer of butter having more than 15.99 per cent. of water in it is legally subject to a tax of $600 per annum; that wholesale dealers in such butter must pay a tax of $480 per annum, and retail dealers $48 per annum. Furthermore, every person who carries on the business of manufacturing such butter without having paid the special tax is, in addition to being liable for the tax, subject to a fine of $1000 to $5000. Similarly, dealers who have not paid the special tax are liable therefor, and, in addition, to be fined from $50 to $500. It is seen, therefore, that dealers in butter should, in protection to themselves, insist upon being furnished genuine butter by the manufacturers.

In respect to the sample of honey submitted by you I will only say that no positive statement can be made concerning its character. From the chemical nature of honey, it is possible to adulterate it in such a way as to defy detection. The sample may have been genuine, as it gave no positive

evidence of adulteration, but, because of the possibility indicated, no honey can be proven by analysis to be unadulterated.

I wish at this time to state that, in respect to No. 13, Sunburst Golden Wax Beans, guaranteed by the Kaw Valley Canning Company, Lawrence, Kan., reported in Bulletin No. 6, the company writes me that it not only guarantees, but itself packs, all the goods which it puts out. The Simpson & Doeller Company, of Baltimore, Md., are the lithographers of the labels used. The company feels that I did it an injury in drawing a wrong inference from an ambiguous label. It is a pleasure to know that we have within our state a canning company doing so large a business on a legitimate basis.

In conclusion, I must not omit to give to my valued assistant, Mr. Howard R. Watkins, full credit for the execution of the analyses of butter recorded herein.

Respectfully submitted.

J. T. WILLARD.

KANSAS STATE AGRICULTURAL COLLEGE,
SEPTEMBER, 20, 1906.

How Oleomargarin is Made.

From report of United States Department of Agriculture.

Many correspondents have inquired for information concerning the manufacture of oleomargarin. The best available information is to the effect that it was first manufactured in France, instead of the United States, as many persons supposed. It originated in 1869, at the instance of the French government having offered a prize for the discovery of the best substitute for butter at a decreased cost. A Parisian chemist, M. Mege-Mouries, won the prize. The industry was early introduced in the United States, but the figures and history prior to 1869 are indefinite and unreliable.

The number and character of ingredients of oleomargarin make them susceptible of almost an infinite number of combinations, and to-day nearly every manufacturer has his own formula, and endeavors to impress his own individuality as a manufacturer upon his product. This fact is also responsible for the varying grades and prices.

Practically all the oleomargarin made in this country is produced by the simple process of churning a melted mixture of oleo-oil and neutral lard with milk, cream or melted butter to give it the butter flavor, and coloring matter to give it any desired shade of yellow, in semblance of butter. In the cheap grades cottonseed-oil is often substituted for a portion of the oleo-oil and neutral lard, but never to the total exclusion of either. The French chemist was fully persuaded that the butter-fat contained in milk was absorbed from the animal tissues of the cow, and his attention was therefore directed to the discovery of a process that would separate from beef fat the oil similar to that of milk. That he succeeded, the magnitude of the oleomargarin business thoroughly attests.

In order to give further information, the following formulas, showing different ingredients and their variation in quantity, are presented:

CHEAP GRADE OLEOMARGARIN.

Oleo-oil	495 pounds.
Neutral lard	265 "
Cottonseed-oil	315 "
Milk	255 "
Salt	120 "
Color	1¼ "
	1,451¼ pounds.

Will produce from 1265 to 1300 pounds.

MEDIUM HIGH GRADE OLEOMARGARIN.

Oleo-oil	315 pounds.
Neutral lard	500 "
Cream	280 "
Milk	280 "
Salt	120 "
Color	1½ "
	1,496½ pounds.

Will produce from 1050 to 1080 pounds.

HIGH GRADE OLEOMARGARIN.

Oleo-oil	100 pounds.
Neutral lard	130 "
Butter	95 "
Salt	32 "
Color	½ "
	357½ pounds.

Will produce about 352 pounds of oleomargarin.

The Bureau of Investigation and Publicity.

Drugs and Medicines.

The following communication from Prof. L. E. Sayre, dean of the school of pharmacy, University of Kansas, will be of interest to physicians and pharmacists of this state, in that it notes the beginning of the establishment of this bureau of investigation and publicity. Following the letter are the rules adopted for the conduct of the work and the sending of samples, which rules will be strictly adhered to.

PURE DRUGS AND MEDICINES.

The State Board of Health, at its annual meeting, June 21, 1906, unanimously adopted rules regulating purity of food and analyses of same. The department of pharmacy, under the advices of the State Board of Pharmacy, has been cooperating with the State Board of Health in this commendable work, recognizing the demands of pure-food and drug laws which take effect January, 1907. The first report on the condition of the drug market was made to the State Board of Health and the State Board of Pharmacy in May, and published by the State Board of Health in the July Bulletin. This work of analyses will be continued, and the department announces its intention of organizing as rapidly as possible a systematic effort on its part to make such analyses as are necessary for the protection of the professions of pharmacy and medicine, and to secure the public against inferior and adulterated medicinal agents. It will assay standard preparations and report whether they conform to the requirements of the United States Pharmacopœia. It will test any official inorganic salts and determine the percentage of purity according to the pharmacopœia.

The pure-food law includes all medicines and preparations recognized in the United States Pharmacopœia or National Formulary for internal or external use, and any substance or mixture of substances intended to be used for the cure, mitigation or prevention of disease of either man or other animals. Adulteration is found if, when a drug is sold under or by a name recognized in the United States Pharmacopœia or National Formulary, it differs from the standard of strength, quality or purity as determined by the test laid down in the United States Pharmacopœia or National Formulary, official at the time of investigation; provided, that no drug defined in the United States Pharmacopœia or National Formulary shall be deemed to be adulterated under this provision if the standard of strength, quality or purity be plainly stated upon the bottle, box or other container thereof, although the standard may differ from that determined by the test laid down in the United States Pharmacopœia or National Formulary.

The Kansas law reads: "Every proprietor or conductor of a drug-store or a pharmacy shall be held responsible for the quality of all drugs, chemicals and medicines he may sell or dispense; and should he knowingly, intentionally and fraudulently adulterate, or cause to be adulterated, such drugs, chemicals, or medical preparations, he shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be liable to a penalty not exceeding $100, and in addition thereto his name shall be stricken from the register."

Organic medicinal chemicals and those subject to deterioration will be tested in order to ascertain their quality and medicinal activity. Microscopically, the department is prepared to consider such substances as:

1. Spices and condiments.
2. Commercial starches.
3. Whole and powdered drugs.
4. Grain and grain products, such as flour, meal, etc.

The above work will be done under the advice and cooperation of the State Board of Health and the State Board of Pharmacy, without cost to any one, if samples are sent through the local or State Board of Health or through the Board of Pharmacy.

RULES GOVERNING ANALYSIS OF DRUGS.

1. Analyses will be made of drugs and medicines suspected to be adulterated within the meaning of the law. Analyses of medicines to simply ascertain their composition will not be made.

2. Analyses of drugs or medicines will be made in cases of suspected poisoning, if sent in by the local or State Board of Health, or by the county coroner having case in charge.

3. Samples for analyses as above indicated must be sent from the local or State Board of Health. All charges must be prepaid, with letter of information accompanying same.

4. All samples sent in must be in sufficient quantity, and sent direct to Prof. L. E. Sayre, department of pharmacy, Lawrence.

Water for Table Use.

From Bulletin No. 262, Experiment Station Work.

It would hardly seem necessary to direct the attention of any one to the desirability of pure water, clean water-coolers, pitchers, water-bottles, and drinking-glasses, and pure ice. Yet, to the careful observer, it is evident that many persons not only overlook the first requirements of an attractive table in these respects, but are careless of the water and ice supply to an extent which menaces the health of the household.

Water may be clear, cold, free from odor and taste, and yet be unfit for drinking purposes because of bacterial contamination from sewage or other cause. In the same way ice may look clean, yet contain objectionable matter, including harmful micro-organisms.

As a part of their regular work, a number of the agricultural experiment stations, including among others those of California, Connecticut (state), Idaho, Indiana, Massachusetts, New Hampshire, South Carolina, Vermont, and West Virginia, have made examinations of potable waters with a view to determining their purity and fitness for household use. In some of this work the ice supplies are also included. In some of the states such examinations are also made under the auspices of the state boards of health.

In Massachusetts the inspection of water and ice supplies has formed a very important part of the work of the state board of health for many years, and an experiment station for the study of water-supply, sewage disposal, and related questions has been established, and many problems relating to water-supply have received extensive study.

That water may often be undesirable for drinking purposes is illustrated by studies at the Vermont Experiment Station. Of 231 samples of water from springs, wells, ponds, etc., analyzed, 22 per cent. of the spring-water, 50 per cent. of the well-water, and 41 per cent. of the water from ponds, etc., were found to be impure, or at least of doubtful purity. Of four samples of pond ice examined, all were unfit for use.

A simple way of securing wholesome water for drinking purposes in the home is to boil it. Many persons object to the taste of boiled water and insist that it is flat and unpalatable. Fresh water owes its sparkle to the air dissolved in it, and the flat taste of boiled water is due to the fact that the air normally present in drinking water has been almost entirely driven out by heat. A few minutes' vigorous boiling is sufficient for ordinary safety; and if fresh water is boiled for a short time only, it retains more or less air and when properly cooled is by no means unpalatable.

Water properly distilled is free from harmful impurities and is very satisfactory for household use. Several stills, simple in construction and operation, have been devised which are suitable for use in the home. Several years ago the statement was quite widely circulated in popular journals that distilled water was very unwholesome, because it dissolved and removed from the tissues necessary salts. So far as can be learned, there was no experimental evidence for such a statement, nor is this belief commonly held by well-informed physiologists.

Boiled, distilled or other water which is perfectly satisfactory for drinking purposes is frequently contaminated by adding dirty ice or by keeping it in a water-cooler which has not received proper attention. If there is any doubt as to the ice supply, it certainly seems the part of common sense to cool the water in receptacles placed near the ice, or in some other way so that it is out of actual contact with the ice. Under favorable conditions the process of freezing is undoubtedly a process of purification, but it may be safely assumed that under ordinary conditions contaminated water will produce an impure and unsafe ice. Moreover, ice is generally handled in a manner which is not conducive to cleanliness. Obviously such ice should not come in contact with food or drink. Its beneficial effects can be obtained without actual contact, and contact means contamination.

The sale of simple potable waters for table use has greatly increased within recent years, owing to the fact that many persons distrust the ordinary water-supply and believe that by purchasing water in bottles or jugs they are sure of obtaining something which is entirely satisfactory.

The Connecticut State Experiment Station recently examined a considerable number of samples of such waters and found that although the majority of them were of good quality a number were not above suspicion. It must be remembered that water from an uncontaminated source may become unwholesome if it is carelessly bottled or marketed in unclean receptacles.

The bureau of chemistry of this department has reported an extended series of investigations which have to do with the mineral waters of the United States, most of them being those which are sold in bottles and more or less extensively used, some for medicinal purposes and others, particularly those containing only a small amount of mineral matter, as table waters. These investigations showed that in many cases when such waters reach the consumer a bottle may not contain the water indicated by the label, owing either to incorrect labeling in the first place or to tampering with the contents of the bottles by the dealer.

Very many persons who are very careful to secure pure water for their tables do not exercise the same precautions with the water used in their kitchens for washing vegetables, etc., and lettuce and other foods which are eaten raw may appear on the table after being washed in water which would not be considered fit to drink.

A good illustration of the need of pure water for household purposes is afforded by experiments at the Iowa Experiment Station on the keeping quality of butter washed with pasteurized and unpasteurized water. In every case the butter washed with the sterile water kept better than the other.

U. S. Geological Sanitary Survey of Kansas Waters.

The apparently increased death-rate from typhoid fever from year to year in Kansas has been a matter of considerable concern to the State Board of Health. The absence of any statutory law governing municipal waste and sewerage, with their attendent pollution of the natural waters of the state, and the lack of reliable data as to the apparent cause of the continuance of the disease, suggested the thought of a cooperative sanitary survey of the Kansas waters by the United States Geological Survey and the State Board of Health. Accordingly the matter was taken up with the federal officials, and through correspondence provisional arrangements made and the basis of work agreed to, which is comprehended in the following agreement:

THIS AGREEMENT, Made and entered into this 1st day of October, 1906, between H. C. Rizer, acting director for and on behalf of the *United States Geological Survey*, of the first part, and *Dr. S. J. Crumbine, secretary*, for and on behalf of the *State Board of Health of Kansas*, of the second part,

WITNESSETH: It is hereby agreed that there shall be conducted in the state of Kansas a cooperative survey to determine, as hereinafter provided, the character, healthfulness and industrial applicability of the waters of said state, during a period of nine (9) months from the 1st day of October, 1906, and that the parties hereunto subscribed shall contribute to the support of said survey as follows:

By the party of the first part...............	$1,500
By the party of the second part.............	1,500
	$3,000

1. That all work performed under this cooperative agreement shall be confined to the determination of the mineral and organic constituents in the

surface- and ground-waters of said state, their applicability for use in industrial and domestic purposes, and their pollution by sewage and industrial waste.

2. That the work performed under this cooperative agreement shall be under the joint direction of Mr. M. O. Leighton, acting chief hydrographer, for the party of the first part, and Dr. S. J. Crumbine, secretary, for the party of the second part, subject to the approval of the parties hereunto subscribed.

3. That a member of the staff of the United States Geological Survey, duly classified by the United States Civil-service Commission, shall be designated to carry on a part of the work provided in this agreement, the nature of which shall be determined by the designated representatives of both parties hereto, and that said official shall be paid the sum of $116.67 for each month of such service.

4. That in case it shall be found previous to the close of the term of this agreement that the expenses incurred will be greater than the total amount of the fund provided, retrenchment shall be made by suspension of work, according to the decision of the representatives of both parties hereto.

5. That in case the expenses of the work outlined in this agreement should not be as great as the fund provided, adjustment shall be made in the last month of the term of the contract by paying salaries and expenses from the various allotments in such a way that the expenditures of each party hereunto subscribed shall be an equal proportion of the amount contributed by each to the fund.

6. And be it understood and agreed, that the original notes and records of the work performed under this agreement shall be the property of the party of the first part, but the party of the second part shall have the right to use any of the results for the special purposes for which said party is created, reserving only the right of prior publication of the results as a whole to the party of the first part; in the publication of such reports of the investigations by the party of the first part, the relationship of each party to the report shall be clearly stated, and the party of the second part shall be provided with an equitable number of copies, to be distributed according to the provisions of any statutes by which either party may be governed.

Provided, That the party of the second part shall be relieved from the obligations herein assumed in case the legislature of the state of Kansas, at its next session, shall fail to provide authority and appropriate money for the investigation herein provided; and

Provided further, That until such time as said legislature shall convene and provide such moneys, all the expenses of the investigation shall be paid from the allotment of the party of the first part, adjustment to be made by equal payment from the allotment of the party of the second part after the same has been available.

IN TESTIMONY WHEREOF, We have hereunto set our hands, the date and year first herein written.

H. C. RIZER,
Acting Director United States Geological Survey, for and on behalf of the party of the first part.

S. J. CRUMBINE,
Secretary State Board of Health of Kansas, for and on behalf of the party of the second part.

It is a source of much gratification to this Board to be able to announce that Mr. Horatio N. Parker, representing the United States Geological Survey, is now upon the field, and in conjunction with Chancellor Strong, of the University, has about completed the details for the work necessary to be done, which will be under the direction of Professors Bailey, Barber, and Bushong.

Stations are being established throughout the various parts of the state at which daily samples of water from the streams will be taken and forwarded to the laboratories at Lawrence. Our next bulletin will contain the names of the stations so located.

The scope and nature of the water survey is as follows:

First, to determine the nature and condition of the unpolluted natural water-supply of the state.

Second, to determine to what extent the natural waters are being contaminated by sewage from cities.

Third, to determine to what extent the natural waters are being polluted by industrial wastes such as come from creameries, smelters, oil refineries, oil-wells, laundries, dyeing establishments, packing-houses, and such other sources as produce pollution, and in what way these industrial wastes might be used for beneficial purposes.

Fourth, to investigate water-borne diseases and assist in determining the best source of water-supply.

The information derived from this work, which will occupy a period of eighteen months or two years, will be of inestimable value to the citizens of this state, not only from a commercial and industrial point of view, but more particularly from a sanitary point of view, and should receive the hearty indorsement of the people, and proper provision should be made by the legislature for carrying on the work so auspiciously begun by the federal government. That this important work should be undertaken by the government in conjunction with the State Board of Health, that the field-work and general supervision should be presided over by the most skilful man whom the government could employ, and the chemical and bacteriological work done by our well-known experts at the State University, and at the same time Uncle Sam pay half the bills, is what real-estate men might denominate a "snap."

Among the most important of arrangements for the field-work is that including a sanitary survey of every city and village in the state, copies of which survey will be kept on file in the office of the secretary of the State Board of Health, and will be of inestimable value as bearing on the interpretation of epidemic and infectious diseases and the general health of that particular community. The contamination of underground flow of waters from cesspools and privy vaults will receive early attention and the information gained be the basis for official and legislative action.

The Drug Laws of Kansas.

General Statutes of 1901.

REGISTERED PHARMACISTS.

§6678. *Conduct of drug-store.* It shall hereafter be unlawful for any person within the state of Kansas to open or conduct any pharmacy, or store for retailing, dispensing or compounding medicines or poisons, unless such person be a registered pharmacist within the meaning of this act, or shall employ a registered pharmacist to conduct the same. And it shall be unlawful for any person to compound and sell at retail any medicines or poisons, or to compound or dispense any physicians' prescriptions, unless such person be a registered pharmacist, or a registered assistant pharmacist, within the meaning of this act, except as hereinafter provided. Any person violating the provisions of this section shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be liable to a fine of not less than twenty-five nor more than one hundred dollars for each and every such offense.

SALE OF POISONS.

§6688. *Restrictions; schedules; labels; records; penalty.* Pharmacists registered as herein provided shall have the right to keep and sell, under such restrictions as herein provided, all medicines and poisons authorized by the National, American, or United States Dispensatory Pharmacopœia as of recognized medicinal utility; provided, that nothing herein contained shall be construed so as to shield an apothecary or pharmacist who violates or in anywise abuses this trust for the legitimate and actual necessities of medicines, from the utmost rigor of the law relating to the sale of intoxicating liquors; and upon conviction of any violation of the prohibitory liquor law his name shall be stricken from the register. It shall be unlawful for any person, on and after the passage of this act, to retail any articles enumerated in schedules A, B, C, except as follows:

Schedule A: Arsenic and its preparations, corrosive sublimate, white precipitate, red precipitate, biniodid of mercury, cyanid of potassium, hydrocyanic acid, chloroform, strychnine, morphine, and all other poisonous vegetable alkaloids and their salts, essential oil of bitter almonds, opium and its preparations, except paregoric and other preparations of opium containing less than two grains to the ounce.

Schedule B: Aconite, belladonna, colchicum, conium, nux vomica, henbane, cantharides, creosote, digitalis, and their pharmaceutical preparations, croton oil, chloral hydrate, sulfate of zinc, sugar of lead, mineral acids, carbolic acid, oxalic acid, and all other virulent poisons.

Schedule C: Oil of savin, oil of tansy, ergot and its preparations, cotton-root and its preparations, and all the other active emmenagogues or abortives.

Articles enumerated in schedules A and B shall not be sold without distinctly labeling the box, vessel or paper in which the said poison is contained, and also the outside wrapper or cover, with the name of the article, the word "poison," and the name and place of business of the seller. Nor shall it be lawful for any person to sell or deliver any poison enumerated in schedules A and B, unless upon due inquiry it be found that the purchaser is aware of its poisonous character, and represents that it is to be used for a legitimate purpose; nor shall it be lawful for any proprietor or owner of any drug-store or pharmacy, or any registered pharmacist, to sell or deliver any articles included in the schedules A and B, without, before delivering the same to the purchaser, causing an entry to be made in a book kept for that purpose, stating the date of sale, the the article sold, the quantity thereof, the purpose for which it is represented by the purchaser to be required, the name of the dispenser, and the name and address of the purchaser, signed by himself; such book to be always open for inspection by the proper authorities, and to be preserved for at least five years. No articles enumerated in schedule C shall be sold except on the prescription of a legally qualified physician. The provisions of this section shall not apply to the sales of poisons to practicing physicians and photographers, and to the dispensing of poisons in not unusual doses or quantities upon the prescriptions of licensed practitioners of medicine. All prescriptions of practicing physicians shall be retained by the dispenser. Any person procuring from any pharmacist articles enumerated in schedules A, B and C under fraudulent representations, shall be deemed guilty of a misdemeanor, and be liable to a fine of not less than twenty-five nor more than one hundred dollars.

§2261. *Labels; sale to minors; penalty.* Every person who shall sell or deliver to any other any arsenic, corrosive sublimate, prussic acid, or any other substance or liquid usually denominated poisonous, without having the word "poison" plainly written or printed on a label attached to the vial, box, vessel or package containing the same; or who shall sell or deliver any tartar emetic, without having the true name written or printed on a label and attached to the vial, box, vessel or package containing the same; or who shall sell or deliver any such substance or liquid to any minor without a written permission from the guardian of such minor specifying the kind of drug that such minor is authorized to purchase, shall on conviction be adjudged guilty of a misdemeanor and punished by a fine not exceeding fifty dollars.

§2662. *Physician not required to label.* So much of the preceding section as requires the word "poison," or the name of the drug sold or delivered, to be labeled on the box, vial, or other package containing the same, shall not extend to any practicing physician who shall deliver any of the articles therein mentioned with a prescription for the use of the article.

ADULTERATION OF DRUGS.

§6686. *Druggist responsible for quality of drugs; adulteration a misdemeanor; penalty.* Every proprietor or conductor of a drugstore or a pharmacy shall be held responsible for the quality of all drugs, chemicals and medicines he may sell or dispense; and should he knowingly, intentionally and fraudulently adulterate or cause to be adulterated such drugs, chemicals or medical preparations, he shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be liable to a penalty not exceeding one hundred dollars, and in addition thereto his name be stricken from the register.

§6687. *Exemptions.* Nothing hereinbefore contained in this act shall apply to any practitioner of medicine who does not keep open shop for retailing, dispensing or compounding of medicines or poisons, nor prevent him from administering or supplying to his patients such articles as he may deem fit and proper. And it is also provided that in rural districts, where there is no registered pharmacist within five miles, it shall be lawful for retail dealers to procure license from the Board of Pharmacy at a fee of two dollars and fifty cents annually, to sell the usual domestic remedies and medicines, not including any articles enumerated in schedules A and B of this act.

§2279. *Penalty.* If any person shall fraudulently adulterate, for the purpose of sale, any drug or medicine, in such a manner as to render the same injurious to health, he shall be punished by imprisonment in the county jail not more than one year, or by fine not exceeding three hundred dollars; and such adulterated drugs and medicines shall be forfeited and destroyed.

§ 2323. *Adulteration prohibited.* No person shall within this state manufacture for sale, offer for sale, or sell, any drug or article of food which is adulterated within the meaning of this act.

§ 2324. *Drug defined.* The term "drug" as used in this act shall include all medicines for internal or external use, antiseptics, disinfectants, and cosmetics.

§ 2325. *Adulteration defined.* An article shall be deemed to be adulterated within the meaning of this act: First, in case of drugs, if, when sold under or by a name recognized under the United States Pharmacopœia, it differs from the standard of strength, quality or purity laid down therein; second, if, when sold under or by a name not recognized in the United States Pharmacopœia or other standard work of materia medica, it differs materially from the standard of strength, quality or purity laid down in such work; third, if its strength, quality or purity falls below the professed standard under which it is sold.

§ 2326. *Dealer must furnish sample for analysis.* Every person manufacturing, offering or exposing for sale, or delivering to a purchaser any drug or article included in the provisions of this act, shall furnish to any person interested or demanding the same, who shall apply to him for the purpose, and shall tender him the value of the same, a sample sufficient for analysis of any such drug or article of food which is in his possession.

§ 2327. *Penalty.* Whoever refuses to comply upon demand with the requirements of section 4 (§ 2326), or whoever violates any of the provisions of this act, shall be deemed guilty of a misdemeanor, and upon conviction shall be fined not exceeding one hundred nor less than twenty-five dollars, or imprisonment not exceeding one hundred days nor less than thirty days, or both. And any person found guilty of manufacturing, offering for sale, or selling any adulterated article of food or drug under the provisions of this act shall be adjudged to pay, in addition to the penalties hereinbefore provided for, all necessary costs and expenses incurred in inspecting and analyzing such adulterated articles of which said person may have been guilty of manufacturing, selling or offering for sale.

There is no good to be looked for from any one who, having never done any substantial work of his own, sets up a business of finding fault with other people's work.—*Keats.*

Revised Rules and Regulations of the Kansas State Board of Health.

At the annual meeting of the State Board of Health held in June, a committee was appointed to revise the rules and regulations of the Board, which committee made its report at the quarterly meeting in September, and the following revisions with additions thereto were adopted, and ordered published, to be in force and effect after their publication.

It will be noticed that these rules include the standarization of disinfectants; also additional new rules governing the conduct of embalmers in cases of contagious diseases. County and municipal health officers should familiarize themselves with these rules and see that they are enforced in their respective jurisdictions.

Attention is called to rules 1 and 2, governing the vexatious cesspool problem. Health authorities should see to their literal enforcement.

I. CONCERNING PRIVY VAULTS, CESSPOOLS, ETC. No privy vault, cesspool or reservoir into which a privy vault, water-closet, stable or sink is drained, except it be water-tight, shall be permitted within fifty feet of any well, spring or other source of water used for drinking and culinary purposes; nor shall any such open into any stream, ditch, or drain, except common sewers, nor shall any such be drained into an underground flow of water or water stratum which is used as a source of water-supply.

II. ABANDONED WELLS. The use of abandoned wells as cesspools is prohibited.

III. CLEANING VAULTS AND CESSPOOLS. All privy vaults, cesspools or reservoirs named in rule 1 must be cleaned at least once a year. All privy vaults shall be thoroughly deodorized at regular intervals by adding to the contents of the vault at least once each month a solution of some deodorizer or disinfectant in sufficient quantity to completely deodorize same.

IV. DEODORIZE BEFORE REMOVAL. No night-soil or contents of cesspools shall be removed until previously deodorized by an approved deodorizer or disinfectant, unless the removal be by an odorless excavating process.

V. DRAINS. All drains carrying sewage passing within fifty feet in ordinary soil, or eighty feet in sandy soil, of any source of water-supply shall be water-tight.

VI. STAGNANT PONDS. All stagnant ponds must be drained or filled up.

VII. REFUSE MATTER—NUISANCE. The collection of refuse matter in or around the immediate vicinity of any dwelling or place of business, such as swill, waste of meat, fish, or shells, bones, decaying vegetables, dead carcasses, excrement, or any kind of offal that may decompose and generate unhealthy gases, and thus affect the purity of the air, shall be considered a nuisance, and must be removed or disposed of, either by burial, burning, or otherwise, and in such manner as not to be offensive.

VIII. PIG-PENS. No pig-pen shall be maintained within 100 feet of any well or spring of water used for drinking purposes, or within thirty feet of any street or fifty feet of any inhabited house. Such pens shall be kept in such a manner as not to be offensive, by being freely deodorized at short intervals. No swine shall be kept within the limits of any incorporated city between May 1 and November 1 of any year.

IX. CATTLE-, SHEEP- AND PIG-PENS, SLAUGHTER-HOUSES, ETC. Every person owning, leasing or occupying any place, room or building wherein cattle, sheep or swine are killed or dressed, and every person being the owner, lessee or occupant of any stable wherein animals are kept, or of any market, public or private, shall cause such place, room, building, stable or market to be kept at all times thoroughly cleansed and purified, and all offal, blood, fat, garbage, stable manure or other unwholesome or offensive refuse shall be removed therefrom at least once in every twenty-four hours, if used continuously, or, if only used occasionally, within twenty-four hours after using; and the floors of such building, place or premises shall be constructed of cement so as to prevent blood, foul liquid or washings from being absorbed. No blood pit, dung pit, offal pit or privy well, shall remain or be constructed within any such place, room, or building; nor shall swine be kept in the same enclosure with a slaughter-house, nor fed there or elsewhere upon the offal of slaughtered animals.

X. UNWHOLESOME MANUFACTORY. No person shall maintain any manufactory or place of business where unwholesome, offensive or deleterious odors, gases, smoke or exhalations are generated, such as tanneries, establishments for boiling bones or dead animals, etc., except such establishments shall be kept clean and wholesome; nor shall any offensive or deleterious or waste substance, refuse or injurious matter from such establishments be allowed to accumulate upon the premises, or be thrown or allowed to run into any public waters, stream, watercourse, street, road, or public place. And every person or company conducting such manufactory or business shall use all reasonable means to prevent the escape of smoke, gases, and odors, and to protect the health and safety of all operatives employed therein.

XI. STABLES TO BE KEPT CLEAN. All stables and stable-yards shall be kept clean; inasmuch as the manure pile is the favorite breeding-place of the common house-fly, it is ordered that between the 1st of May and the 1st of November not more than one wagon-load of manure at any private stable nor more than two wagon-loads at any livery or hotel stable shall be allowed to accumulate in or near the same at one time. When necessary to remove such manure from off the premises as aforesaid, it should be done in such a manner as to be least offensive, so that none of it may be dropped or left in any street, lane, road, or passageway.

XII. ISOLATION OF CONTAGIOUS DISEASES. All persons sick with smallpox, cholera, scarlet fever, diphtheria or other contagious or infectious diseases shall be thoroughly isolated from the public. Four hundred feet is suggested as the minimum distance for the thorough isolation of smallpox.

XIII. PUBLIC FUNERALS. Public funerals are prohibited in cases where a body has died of a contagious disease, and no more persons should be permitted to go to the cemetery than are necessary to inter the corpse.

XIV. CARE OF ROOM IN CONTAGIOUS OR INFECTIOUS DISEASES. The room occupied by a person sick with a contagious or infectious disease should previously be cleared of all carpets, needless clothing, furniture, draperies, books, and toys, and all other articles not actually needed in the care of the sick. After death or recovery, the room, furniture and other contents not to be destroyed must be immediately and thoroughly disinfected by an approved disinfectant. The floor, woodwork and wooden furniture should be then scrubbed with soap and water and afterwards mopped with a two-per-cent. solution of formalin. All utensils that can be washed should be thoroughly boiled. Individual dishes and drinking cups should be used, and in typhoid fever particularly the room should be kept free from flies by effective screening. Dogs, cats, other pet animals or birds are prohibited in the sick-room.

XV. Disinfection of Discharges from Sick. The discharges of the patient must be received into vessels containing some known disinfectant, and if not buried at once, must be thrown into a cesspool or water-closet, but never on the ground, nor into a running stream. Perfect cleanliness on the part of the nurses and attendants is enjoined.

XVI. Births and Deaths. All births and deaths occurring in the practice of physicians shall be reported to the local board of health where the same occur within five days after the expiration of the month in which they occur, in the manner indicated in the blank forms prepared by this Board from time to time and distributed through the county health officers; provided, that deaths occurring from infectious or contagious diseases shall be reported, as above described, within twenty-four hours after their occurrence; provided, also, where deaths occur within the jurisdiction of a municipal board requiring reports within a shorter period of time, such rule shall be binding.

XVII. Vaccination. No person, until after being successfully vaccinated, shall be admitted into public or private schools or institutions of learning in the capacity of teacher or pupil. The vaccination should be repeated after the age of sixteen. The local boards of health shall exercise hygienic supervision over the schools and schoolhouses within their respective jurisdictions, and, where hygienic faults are found, said boards shall immediately call the attention of the school authorities thereto.

XVIII. Public Institutions. The following rule is made with respect to public institutions: It is respectfully recommended to the Board of Control of the State Charitable Institutions, the several boards of education, the trustees or directors of the several hospitals within the state, the officers and regents of the State University, Normal School, and Agricultural College, and other institutions of higher education, to make or cause to be made, by their health officers or attending physicians, or by one or more experts in sanitary science, at intervals of not exceeding one month, a thorough and critical examination of the institutions under their charge, with special reference to the purity of the water-supply, the disposal of slops and garbage, the draining and sewerage, cellars, cesspools, privy vaults, urinals, pig-pens, and especially sleeping apartments, and report the same immediately to the State Board of Health. It is likewise recommended that the local boards of health exercise especial hygienic supervision over all such institutions within their jurisdiction.

XIX. BOOKS AND REPORTS. All books, reports and papers of an official character in the hands of the county health officer are the property of the county or state; and all such property in the hands of such county health officer should be, and are hereby required to be, turned over at the expiration of their term of office to their successors in office.

XX. MONTHLY REPORTS. It shall be the duty of every county health officer to collect and forward monthly returns of deaths, births and contagious diseases reported by the physicians and midwives practicing in his county. It is his duty to see that the law is enforced, in case of neglect to make such reports to him.

XXI. TRANSPORTATION OF CONTAGIOUS DISEASES PROHIBITED. Transportation companies, including steam railway, suburban electric lines, and street-railways, are prohibited from receiving any person for transportation who is suffering from smallpox, diphtheria, scarlet fever, measles, or erysipelas.

XXII. DISINTERMENT AND TRANSPORTATION. The following regulations respecting the disinterment and transportation of dead bodies will be observed: Application shall be made for the disinterment of any body in Kansas to the secretary of the State Board of Health upon a blank prepared for that purpose, setting forth all the material facts concerning the name and age of deceased, the time of death, cause of death, and where buried; also name and place of reinterment, and the name and address of the undertaker having the remains in charge. Such application will receive the consideration of the secretary, and permission granted if in his judgment disinterment can be made without endangering the public health. Permission to disinter bodies that have died of yellow fever, Asiatic cholera, smallpox, diphtheria, membranous croup, or scarlet fever (scarlatina, scarlet rash) can only be granted by the State Board of Health while in session. No permit will be granted by application made by telegraph or telephone.

XXIII. TRANSPORTATION OF THE DEAD. The following regulations respecting the transportation of dead bodies for burial beyond the county where the death occurred will be observed: No body which has died of any infectious disease shall be received for transportation by any transportation company in this state unless it shall have been embalmed by a person holding an embalmer's certificate properly signed by the president and secretary of the State Board of Health. Every license holder shall enter the number of his embalmer's certificate and the number of the rule under which the body was prepared upon every permit which he fills out. In all such cases the said Board of Health shall require coupons attached to such permits to be detached and preserved by every common carrier, or the person in charge of any vessel, railway-train or vehicle to which dead bodies shall be delivered for transportation. No permit shall be issued for the transportation of bodies which have died of any infectious disease except in accordance with the foregoing rule. Any violation of these rules shall subject the offender to a fine of ten dollars for each offense.

XXIV. STATE QUARANTINE, WHEN NECESSARY. Whenever any part of this state appears to be threatened with Asiatic cholera, smallpox or other infectious or contagious disease from any adjoining state or territory, the secretary and executive officer of this Board shall have the power, and it shall be his duty, when requested by the mayor and council of any city of this state, or by any local board of health of any city of this state, to establish and maintain quarantine stations at the limits of the state at such points as may be deemed necessary, and to enforce thereat such rules and regulations as he may adopt and publish for the purpose of preventing or obstructing the introduction or spread of such disease, by the inspection of all persons, places, and things, and the exclusion of all infected or suspected persons and goods, and the purification of all infected places and things. In the interim between the meetings of the State Board of Health, the secretary and executive officer of this Board shall have the power and authority to adopt and enforce all rules and regulations which may be necessary to prevent the introduction or spread of such disease as is conferred upon the State Board of Health by law.

XXV. SANITARY CONTROL OF PUBLIC BUILDINGS. Local boards of health have sanitary control of all public buildings within their jurisdiction. The following is recommended respecting care of same: All floors and halls not carpeted should be swept with sawdust dampened with a one-per-cent. solution of formalin. The common duster should be abolished, and dusting done by removing dust with a dampened cloth. Frequent inspection of all closets, drainage and ventilation should be made, and where faulty hygienic surroundings are found, recommendations in writing for their betterment made to the county board of health and district judge.

XXVI. PUBLIC BATH. No person who is suffering from gonorrhea shall be served in a public bath-room in this state, and no person suffering from syphilis shall be served in any barber shop, such prohibition to continue until twelve months has elapsed from date of infection.

RULES FOR LABORATORY.

XXVII. The following rules have been adopted for the government of the state laboratory:

(1) Free examination of sputum of tuberculosis and specimens from suspected cases of diphtheria shall be made for all physicians of the state; physicians in cities of the first class must send specimens through their county health officer. If county health officer is located at an inconvenient distance from such city, the municipal health officer may be designated instead.

(2) All specimens must be sent in boxes and mailing cases provided by the State Board of Health.

(3) Examinations of water shall be made only upon request of county health officer.

(4) Repositories for supplies shall be established in each county in the state.

(5) A thorough disinfection of the hands and all instruments and appliances, together with fluids removed from the body, shall also apply to cases of tuberculosis, typhoid fever and puerperal or childbed fever.

(6) Examinations of specimens for the purpose of life insurance will not be received.

RULES FOR EMBALMERS IN CONTAGIOUS DISEASES.

XXVIII. Rules for embalmers in the preparation of bodies that have died of any of the following diseases: Smallpox, typhus fever, diphtheria, scarlet fever, measles, and erysipelas.

(1) In the preparation of bodies for burial or transportation the following precautions shall be taken by the embalmer, when death has resulted from any of the following diseases: Smallpox, typhus fever, diphtheria, scarlet fever, measles, and erysipelas.

(2) Except where the room containing the body has been previously disinfected by the health authorities, the embalmer, before entering such room, shall don outer garments of rubber or cloth completely covering the body, and a cap to cover the hair. Upon leaving the room, these shall be removed and placed in a bag or wrapped in a sheet or other covering, all of which shall be disinfected by formaldehyde fumigation, or boiling in water, as soon thereafter as possible. He shall also, before leaving the house, thoroughly disinfect his hands, giving especial attention to the finger-nails.

(3) All knives, trocars, needles, syringes, and other instruments, and all vessels, sponges, gloves, cooling-boards, or other things used in embalming or preparation of such dead bodies, or taken into the room by the embalmer, shall be thoroughly disinfected immediately after being used.

(4) All fluids or other matter removed from such bodies in the process of embalming shall be mixed with an equal quantity of a five-per-cent. solution of either formalin or carbolic acid before being finally disposed of.

XXIX. PLACARDING. The quarantine law provides that houses where any person is sick with cholera, smallpox, scarlet fever, diphtheria, epidemic cerebro-spinal meningitis or any disease dangerous to the public health shall be immediately placarded, and notice given to the nearest board of health. In addition to these requirements, health officers should also placard all houses where there is measles, whooping-cough, or chicken-pox, and restrain persons so afflicted from attending the public schools, churches, or other places of public assemblage. It is not deemed necessary to practice any other measures of restriction or quarantine. It is necessary, however, in the interests of public health, that due notice be given to the public by the display of the placard on such infected houses.

XXX. DISINFECTION. Formaldehyde gas and sulfur dioxid are the disinfectants approved by this Board. The following rules should be observed in the disinfection after all contagious and infectious diseases, including tuberculosis, typhoid fever, and puerperal fever:

PREPARATION OF ROOMS.

Whether formaldehyde or sulfur is to be used to disinfect the rooms, contents, etc., it is necessary first that the windows, doors (with the exception of the one which is to give exit to the operator), registers, openings into chimneys, keyholes and all other apertures through which air can pass shall be sealed; in other words, the rooms should be made as air-tight as possible. Gummed paper, put up in rolls, is made for this particular purpose; in lieu of it, however, common newspaper, cut into narrow strips and thoroughly wet, may be used, as it will remain in position long enough for the purpose. The paper used for sealing the cracks, whether gummed or not, should be wet with a solution of formaldehyde (solution No. 3), in order to disinfect the surfaces upon which it is to be pasted.

All surfaces should be exposed as much as possible; closet doors opened and their contents, together with the contents of drawers, removed, scattered about, and the drawers left open, mattresses set on end, pillows, bedding, clothing, etc., suspended from lines stretched across the room, or spread out on chairs or other objects, so as to expose all sides; books opened and the leaves spread—in short, the room and its contents so disposed as to secure free access of the gas to all parts as fully as possible. Upon this preparation largely depends the thoroughness of the disinfection.

DISINFECTION BY FORMALDEHYDE (OR FORMALIN).

At the present time formaldehyde is the most popular and, under proper conditions, the most efficient of the various substances used as disinfectants, but, among people who have to do with the practical methods of room and house fumigation, the present method of either generating the gas or of liberating it from its watery solution fails to give anything like general satisfaction. Three methods of procuring the formaldehyde are at present in quite general use—the lamps which form formaldehyde by oxidation of methyl alcohol; the lamps which evaporate the solution of the gas and water (and commercially known as formalin); and the sheet method, as at present used in Chicago, where the solution of formalin is sprayed upon suspended sheets, from which it evaporates and diffuses throughout the room. The chief objection to all these methods is that a very long period of time is required before all the formaldehyde to be used is liberated in the space to be disinfected. This naturally allows a considerable quantity of the gas to escape by leakage, and also prevents the gas from reaching its maximum density quickly.

A fourth method, and one which has been thoroughly tested and worked out by several of the state boards of health, is much more efficient than the other three forms spoken of, and certainly cheaper and within the reach of every person or community, and is a process which this Board would recommend. Earthen jars or tin containers should be used—a three-gallon jar for say a pint of formalin, which is the necessary quantity for 1000 cubic feet of air space, and a five-gallon jar in a room requiring from one to two quarts of formalin. If possible, these jars should have flaring tops, as the ascending fumes more quickly dissipate through the air than in a straight jar, from which the fumes go in a straight column to the ceiling. Seven and one-half ounces of permanganate powder or permanganate of potash (commercial) should be used to each pint of formalin. After the room has been thoroughly prepared in the manner indicated, these jars should be placed upon the floor in the center of the room with a sufficient amount of powdered permanganate in them and the formalin solution poured over same, when the person operating same should beat a hasty retreat, closing the door and sealing it. The chemical action generated thereby produces sufficient heat to thoroughly vaporize or liberate all the formaldehyde gas contained in this formalin solution. Active evolution takes place, and it is sometimes wise to take the precaution to set the generator inside another larger jar, in order to catch any overflow which might result from the active boiling.

The room to be fumigated should be warmed to about 70 deg. F., and the earthen jars or tin containers should be also warmed, or wrapped with asbestos or some material to retain the heat generated by the chemical action, as heat is an important factor in completing the liberation of the gas in order to get the maximum quantity. The air of the room should contain as much moisture as possible, which may be supplied by boiling water, pouring into the open vessel and allowed to remain for fifteen minutes. (Fumigation in dry atmosphere is not so effective.) With this sudden saturation of the atmosphere, with the maximum quantity of gas, it is evident that the time of exposure can be very greatly reduced, and in a series of 279 tests made by the State Board of Health of Maine it was determined that a three-hours' exposure in a room fumigated by this process, with the quantity of formaldehyd and permanganate as indicated, was sufficient to kill any and all pathogenic germs. It is advised, however, in order to be on the safe side, to have such exposures for a longer period of time—at least five hours. With this simple process, if caution is taken concerning the sealing of rooms, proper temperature and moisture, and proper amount of formalin, it is within the reach of every person to have a thorough disinfection. After the room has remained closed for five or six hours it should be opened up as freely as possible to light and air, and the family is instructed to have the woodwork scrubbed with hot water, or with solution No. 3 or No. 5.

SULFUR FUMIGATION.

Fumigation with sulfur has long been regarded as a reliable method of disinfection, but it has been largely superseded by formaldehyde. However, it may be used when thought advisable and under certain conditions. It has the disadvantage of being a bleaching agent, and might therefore destroy many articles of clothing, furniture, etc. In old buildings, lumber camps, and other places, where it is impossible to seal the room or infected area, sulfur fumigation may have some advantages, in that a large amount may be consumed, thereby, perhaps, securing greater penetration, and possibly with more effective results than could be obtained with formaldehyde. It also has the advantage over formaldedyde in that it kills insects, which, as is well known, are frequently conveyers of disease. The ideal fumigation is to follow the one agent by the use of the other.

The method of preparing rooms and distributing articles therein is the same as described above, with the exception of such as would be ruined by sulfur fumes.

Close the room as tightly as possible, place the sulfur in iron pans supported by bricks, placed in wash-tubs containing a little water; set it on fire by hot coals, or with the aid of a spoonful of alcohol, and allow the room to remain closed for twenty-four hours.

For a room about ten feet square at least three pounds of sulfur should be used; for larger rooms, proportionately larger quantities.

Heavy woolen clothing, silks, furs, stuffed bed covers, beds and woolen articles which cannot be treated with disinfectants should be hung in the room during fumigation, their surfaces thoroughly exposed, and their pockets turned inside out. Afterward they should be hung in the open air, beaten, and shaken.

Pillows, beds, stuffed mattresses, upholstered furniture, etc., should be cut open and their contents spread out and thoroughly fumigated.

Carpets are best fumigated on the floor, but they should be afterward removed to the open air and thoroughly beaten.

DISINFECTANT SOLUTION.

Much of the so-called disinfection practiced in families is wholly inefficient and useless. The burning of coffee, tar, sulfur or other substances in the sick-room, or in any other part of the house or premises, in the presence of the patient or other persons, operates at most only as a deodorizer and does not destroy the germs of the disease.

It should also be known that many of the preparations offered for sale as disinfectants, germ-killers, etc., are worthless, or nearly so, and should never be relied upon.

Reliable formulas are here given by which a family may make disinfectant solutions possessing the required strength and efficiency, and at much less cost than is asked for proprietary preparations.

DISINFECTANTS TO BE EMPLOYED.

For general household purposes during the continuance of a case of contagious or infectious disease, or at other times when needed, the following formulas for disinfectant solutions are both satisfactory and cheap:

Solution No. 1.—Chlorid of lime (bleaching powder), one pound; water, three gallons; mix. Cost, about three cents per gallon.

Care should be taken to obtain fresh chlorid of lime.

This solution is so cheap that it can be used with great freedom, and it is one of the best disinfectants known. A quart or more per day may be used in an offensive vault, and such quantities as may be necessary in other places. It may be used in a sprinkler in stables and elswhere. In a sick-room it may be used in vessels, cuspidors, etc. Sheets and other clothing used by the patient may be immersed in a pail or tub of this solution, diluted (one gallon of solution to ten of water), for two hours, or till ready for the wash-room or laundry. This solution is non-poisonous and does not injure white clothing.

It may also be used for washing the hands or other parts of the body which may have been exposed to infection from excreta, etc.

For a free and general use in privy vaults, sewers, sink drains, refuse heaps, stables, and wherever else the odor of the disinfectant is not objectionable, this is one of the cheapest and most effective disinfectants and germicides available for general use. It should be used so freely as to wet everything required to be disinfected. Its odor does not disinfect—only covers up other odors.

Solution No. 2.—Corrosive sublimate, one ounce; permanganate of potash, one ounce; water, eight gallons; mix and dissolve. Label "Poison." Cost, two to three cents a gallon, when chemicals are bought by the pound. Stains fabrics, etc.

Use the same way and for the same purpose as No. 1. The only advantage this has over No. 1 is the fact that it possesses no odor. It is poisonous, but its bright purple color will prevent its being mistaken for any other solution. It should be used in vessels, cuspidors, etc., in case of infectious or contagious disease, when solution No. 1 is objectionable on account of its odor. It is not so good a disinfectant for vaults, sink drains, sewers, etc., as the chlorid of lime solution. It should not be kept in metallic vessels.

Solution No. 3.—Dissolve one drachm (60 grains or ⅛ ounce) each of corrosive sublimate and muriate of ammonia in one gallon of water. Dissolve in a wooden tub, barrel, or pail, or an earthen crock. Label "Poison." Cost, about the same as No. 2.

Use for the disinfection of soiled underclothing, bed linen, etc. Mix solution with equal quantity of water and immerse articles for four hours; then wring them out and boil them.

Mixed with an equal quantity of water, the solution is useful for washing the hands and general surfaces of the bodies of attendants and convalescents; the latter only by direction of the physician.

Solution No. 4.—Milk of lime (quicklime). Slake a quart of freshly burned lime (in small pieces) with three-fourths of a quart of water—or, to be exact, 60 parts of water by weight with 100 of lime. A dry powder of slaked lime (hydrate of lime) results. Make milk of lime not long before it is to be used by mixing one part of this dry hydrate of lime with eight parts (by weight) of water.

Air-slaked lime is worthless. The dry hydrate may be preserved some time if it is enclosed in an air-tight container. Milk of lime should be freshly prepared, but may be kept a few days if closely stoppered.

Quicklime is one of the cheapest of disinfectants. This solution can take the place of chloride of lime if desired. It should be used freely, in quantity equal in amount to the material to be disinfected. It can be used to whitewash exposed surfaces, to disinfect excreta in the sick-room, or on the surface of the ground, in sinks, drains, stagnant pools, etc.

Solution No. 5.—Solution of formaldehyde (formalin), six ounces; water, one gallon; mix. Cost, eight or ten cents. Contains a little less than two per cent. of formaldehyde.

This solution may be used in the same manner as those above described. It has the advantage of not bleaching fabrics, and is especially good for washing furniture, woodwork, etc.

The disinfecting solutions above given are for use in connection with the patient during illness, and for such general family use as may be indicated. In other words, nothing should be allowed to go from the sick-room until after it has been disinfected with one of these solutions. It should be one of the unceasing duties of the nurse or other person or persons attending the patient to see that disinfection, as herein indicated, is carried out daily, and to the minutest particular.

Transmission of Spotted Fever by Means of the Tick.

Reports to the surgeon-general, United States Public Health and Marine Hospital Service. Experimental Transmission of Rocky Mountain Spotted Fever by Means of the Tick. Preliminary Note. By W. W. King, Passed Assistant Surgeon Public Health and Marine-hospital Service, detailed April 19, 1906, by the surgeon-general to investigate the disease in Montana.

The belief that spotted fever was caused by a piroplasma, a genus of organisms carried by ticks, and the coincidence of the season of prevalence of the fever with that in which the ticks are found, suggested to Wilson and Chowning the possibility that the tick was the agent concerned in the transmission of the disease.

The theory was extremely difficult of either proof or disproof, the fatality being too great to justify experimentation with human subjects, and until the present season none of the lower animals were shown to be susceptible to the infection.

During the spring of 1906, guinea-pigs and monkeys were proved to be susceptible to spotted fever by direct inoculation with blood from patients. The typical fatal disease was repeatedly produced by Ricketts and by myself, and I am still continuing the disease from one animal to another.

To prove or disprove tick infection now seemed possible, and with this idea in view, I placed one male and three female ticks (*Demacentor occidentalis*) on a guinea-pig suffering with spotted fever. They remained until removed after the death of the animal, two and one-half days later. The female ticks were but slightly enlarged.

These ticks were taken to the hygienic laboratory, Washington, D. C., the male dying in transit.

Nine days after removal from the first guinea-pig, the remaining female ticks were placed upon a healthy guinea-pig. One was killed by the guinea-pig. The others remained until they dropped off, after five days. Three days later the guinea-pig began to show symptoms. It developed the same clinical picture as those animals inoculated directly with infectious blood. There was fever, emaciation, enlargement of the scrotum, very marked hemorrhagic eruption on skin of scrotum, ears, feet, and back. At death two hemorrhagic spots on the scrotum were becoming gangrenous. The tick-infected pig had been kept in a separate cage, and at no time was in any contact with other animals having spotted fever. A guinea-pig was inoculated with the heart's blood from the tick-infected pig. It has sickened, and apparently will develop the disease.

Whether the transference was mechanical, or whether the infecting organism must undergo a cycle of development, remains to be determined, and will be the subject of further experiments. However, it seems conclusive that the tick is capable, under certain circumstances, of conveying the infection from guinea-pig to guinea-pig, whether the transmission be mechanical or biological.

This fact is the first positive experimental evidence in favor of the tick theory, and reopens the question of this method of infection in man. At least, it deserves the serious consideration of people living within infected territory.

Undrawn cold-storage poultry, game and fish have received the condemnation of the United States Department of Agriculture and the states of Minnesota, Pennsylvania, *and Kansas, too.*

Schools to Fight Consumption.

From a bulletin of the Illinois State Board of Health.

As a result of a conference between a committee from the Chicago Tuberculosis Institute and the Chicago Board of Education, the various schools of the city will take an active part in the fight against consumption.

The plan of action which will doubtless be adopted includes the following features:

The establishment in every school building of a dispensary room for the examination of "suspects" and the treatment of cases.

The organization of a corps of visiting nurses to visit the homes of "suspects," dress open wounds, and report conditions to the board. It was pointed out that such a corps of nurses would render valuable service in reducing truancy by investigating all cases of illness and returning sufferers from minor complaints to the schools with all possible speed.

Regular inspection of all schools at stated periods by medical inspectors.

Establishment of a system of surveillance for "suspects" and those suffering with the disease, with a view to excluding the victims the moment their presence in the classroom becomes a menace to the other children.

The providing of special educational facilities for the victims of tuberculosis in its contagious forms.

The segregation of all children suffering from tuberculosis of the bone.

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No. 11. NOVEMBER, 1906. VOL. 2.

Smile! *Try again!* NEVER COMPLAIN!

Diligence is the mother of good luck.—*Benjamin Franklin.*

To be able to see things exactly as they are is a mark of broad culture.—*S. S. Estey, Ph. D.*

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VITAL STATISTICS

Reported to the Kansas Board of Health for October, 1906.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Allen	0	0	8	8	14	1	0	0	0	0	0	0
Anderson	0	0	0	0	8	2	0	0	0	0	0	0
Atchison	2	2	0	0	3	0	0	0	0	0	0	0
*Barber												
Barton	1	1	0	0	2	0	0	0	1	0	0	0
Bourbon	0	0	3	0	3	0	0	0	0	0	0	0
Brown	0	0	1	0	1	0	0	0	0	0	0	0
Butler	0	0	3	0	12	2	0	0	0	0	2	0
Chase	0	0	7	2	0	0	7	0	0	0	0	0
Chautauqua	0	0	0	0	14	1	3	0	0	0	0	0
Cherokee	1	1	8	2	22	3	0	0	0	0	0	0
Cheyenne	0	0	2	1	0	0	0	0	9	0	0	0
Clark	1	0	2	1	0	0	8	0	0	0	0	0
Clay	0	0	1	0	0	0	0	0	0	0	0	0
Cloud	0	0	2	1	1	1	2	0	1	0	0	0
Coffey	1	0	1	0	1	0	0	0	0	0	0	0
Comanche	0	0	1	1	0	0	0	0	0	0	0	0
Cowley	2	2	2	2	0	0	0	0	0	0	0	0
Crawford	4	4	1	1	3	1	3	2	0	0	0	0
Decatur	0	0	0	0	0	0	3	0	0	0	1	0
Dickinson	0	0	0	0	2	0	0	0	0	0	0	0
Doniphan	1	1	1	1	1	0	0	0	0	0	0	0
Douglas	0	0	7	1	55	4	0	0	0	0	0	0
Edwards	2	2	1	1	0	0	0	0	0	0	0	0
Elk	0	0	0	0	2	0	0	0	0	0	0	0
Ellis	0	0	0	0	0	0	1	0	0	0	0	0
*Ellsworth												
†Finney												
Ford	0	0	3	2	0	0	0	0	3	0	0	0
Franklin	0	0	4	2	0	0	0	0	0	0	0	0
Geary	0	0	5	0	2	0	3	0	0	0	0	0
Gove	0	0	0	0	0	0	5	0	0	0	0	0
Graham	0	0	3	2	0	0	0	0	0	0	0	0
†Grant												
†Gray												
Greeley												
Greenwood	0	0	16	2	9	0	0	0	0	0	0	0
*Hamilton												
Harper	0	0	1	0	3	0	0	0	0	0	0	0
Harvey	0	0	3	1	0	0	4	0	0	0	0	0
†Haskell												
Hodgeman	0	0	6	0	0	0	0	0	0	0	0	0
Jackson	3	3	0	0	1	0	0	0	0	0	0	0
Jefferson	1	1	0	0	10	0	5	0	0	0	0	0
*Jewell												
Johnson	0	0	0	0	4	0	0	0	0	0	0	0
*Kearny												
Kingman	0	0	3	0	30	2	0	0	0	0	1	0
†Kiowa												
Labette	0	0	1	1	13	3	0	0	0	0	0	0
†Lane												
Leavenworth	2	1	1	0	8	2	0	0	0	0	0	0
Lincoln	0	0	0	0	8	0	0	0	0	0	0	0
Linn	0	0	1	1	6	2	0	0	0	0	0	0
†Logan												
Lyon	0	0	0	0	29	1	7	0	0	0	0	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Marion	0	0	0	0	11	2	0	0	0	0	0	0
Marshall	0	0	1	0	9	2	0	0	0	0	0	0
McPherson	3	0	15	1	0	0	1	0	0	0	0	0
Meade	1	1	0	0	1	0	0	0	0	0	0	0
Miami	0	0	0	0	1	0	0	0	0	0	0	0
Mitchell	0	0	3	0	0	0	0	0	0	0	0	0
Montgomery	0	0	1	1	0	0	0	0	0	0	0	0
Morris	0	0	5	1	4	0	0	0	0	0	0	0
†Morton												
Nemaha	2	2	0	0	0	0	6	0	0	0	0	0
Neosho	4	4	1	1	1	1	1	0	0	0	0	0
†Ness												
†Norton									0	0	0	0
Osage	2	2	3	1	2	1	0	0	0	0	0	0
Osborne	6	0	0	0	0	0	0	0	5	0	0	0
*Ottawa												
†Pawnee										0	0	0
Phillips	0	0	2	0	2	0	0	0	0	0	0	0
Pottawatomie	0	0	1	0	2	0	0	0	0	0	0	0
Pratt	3	0	4	0	0	0	8	0	0	0	0	0
Rawlins	0	0	1	0	0	0	8	0	0	0	0	0
Republic	1	0	2	0	12	0	8	0	0	0	0	0
Reno	0	0	9	0	10	1	0	0	0	0	0	0
Rice	4	0	2	0	0	0	0	0	0	0	2	0
Riley	2	0	1	0	22	1	3	0	0	0	1	0
Rooks	1	1	2	1	0	0	0	0	0	0	0	0
Rush	8	1	3	2	0	0	0	0	0	0	0	0
Russell	0	0	2	0	0	0	0	0	0	0	0	0
†Saline												
†Scott												
*Sedgwick												
Seward	0	0	0	0	0	0	5	0	0	0	0	0
Shawnee	0	0	0	0	10	0	1	0	0	0	0	0
Sheridan	0	0	0	0	0	0	8	0	0	0	0	0
†Sherman												
*Smith												
*Stafford												
‡Stanton												
†Stevens												
Sumner	8	3	3	1	8	2	4	0	2	0	0	0
*Thomas												
*Trego												
Wabaunsee	0	0	0	0	3	0	0	0	0	0	0	0
Wallace	2	0	0	0	0	0	0	0	0	0	0	0
Washington	1	0	2	0	0	0	0	0	0	0	0	0
Wichita	1	0	1	0	0	0	0	0	0	0	0	0
Wilson	0	0	12	2	27	4	0	0	2	0	0	0
Woodson	1	1	0	0	1	0	0	0	0	0	0	0
Wyandotte	0	0	0	0	7	1	0	0	0	0	0	0
Cities:												
*Atchison												
Coffeyville	0	0	0	0	14	1	1	0	0	0	0	0
*Fort Scott												
Kansas City	10	8	50	6	25	2	2	0	0	0	5	0
Leavenworth	3	3	0	0	7	0	0	0	0	0	0	0
Parsons	8	0	2	0	3	1	0	0	0	0	0	0
Topeka	0	0	1	1	66	2	7	0	0	0	0	0
*Wichita												
State Institutions,	3	1	0	0	0	0	0	0	0	0	0	0
Totals	80	45	234	46	516	46	99	8	23	0	12	0
For Oct., 1905	93	52	248	40	384	41	152	0	36	0	0	0

* No report. † No contagious diseases in county. ‡ No health officer.

FOOD LAW RULES AND REGULATIONS.

Official Text of Government Requirements.

WASHINGTON, October 20.—The rules and regulations to govern the enforcement of the pure food and drug act were officially promulgated to-day. They represent the unanimous agreement of the commission and have been approved by the secretaries of the treasury, of agriculture, and of commerce and labor. The full official text is here given, as is also the official text of the law itself:

UNITED STATES DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY—*Circular No. 21.*

LETTER OF TRANSMITTAL.

WASHINGTON, D. C., October 16, 1906.

The Secretaries of the Treasury, of Agriculture, and of Commerce and Labor:

SIRS—The commission appointed to represent your several departments in the formulation of uniform rules and regulations for the enforcement of the food and drugs act, approved June 30, 1906, has reached a unanimous agreement, and respectfully submits the result of its deliberations and recommends their adoption. Very respectfully,

H. W. WILEY.
JAMES L. GERRY.
S. N. D. NORTH.

RULES AND REGULATIONS FOR THE ENFORCEMENT OF THE FOOD AND DRUGS ACT.

GENERAL.

Regulation 1.—Short Title of the Act.

The act "for preventing the manufacture, sale or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines, and liquors, and for regulating traffic therein, and for other purposes," approved June 30, 1906, shall be known and referred to as "the food and drugs act, June 30, 1906."

Regulation 2.—Original Package.

(Section 2.)

The term "original package" as used in this act is the original package, carton, case, can, box, barrel, bottle, phial or other receptacle put up by the manufacturers, to which the label is attached, or which may be suitable for the attachment of a label, making one complete package of the food or drug article. The original package contemplated by this act includes both the wholesale and the retail package.

Regulation 3.—Collection of Samples.

Samples of broken packages shall be collected only by authorized agents of the Department of Agriculture; or by the health, food or drug officer of any state, territory, or the district of Columbia, when commissioned by the secretary of agriculture for this purpose.

Samples may be purchased in the open market, and if in bulk the marks, brands or tags upon the package, carton, container, wrapper of accompanying printed or written matter shall be noted. The collector shall also note the names of the vender and agent through whom the sale was actually made, together with the date of purchase. The collector shall purchase representative samples.

A sample shall be divided into three parts, and each part shall be labeled with the identifying marks. All samples shall be sealed by the collector with a seal provided for the purpose. If the package be less than four pounds, or in volume less than two quarts, three packages of approximately the same size shall be purchased, and the marks and tags upon each noted as above. One sample shall be delivered to the party from whom purchased, or to the party guaranteeing such merchandise; one sample shall be sent to the bureau of chemistry or to such chemist or examiner as may be designated by the secretary of agriculture, and the third sample shall be held under seal by the secretary of agriculture.

Regulation 4.—Methods of Analysis.

(Section 4.)

Unless otherwise directed by the secretary of agriculture, the methods of analysis employed shall be those prescribed by the Association of Official Agricultural Chemists and the United States Pharmacopœia.

Regulation 5.—Hearings.

(Section 4.)

(*a*) When the examination or analysis shows that the provisions of this act have been violated, notice of that fact, together with a copy of the findings, shall be furnished to the party or parties from whom the sample was obtained or who executed the guaranty as provided in the act, and a date shall be fixed at which such party or parties may be heard before the secretary of agriculture, or such other official connected with the food and drug inspection service as may be commissioned by him for that purpose. The hearings shall be had at a place to be designated by the secretary of agriculture, most convenient for all parties concerned. These hearings shall be private, and confined to questions of fact. The parties interested therein may appear in person or by attorney, and may propound proper interrogatories and submit oral or written evidence to show any fault or error in the findings of the analyst or examiner. The secretary of agriculture may order a reexamination of the sample or have new samples drawn for further examination.

(*b*) If the examination or analysis be found correct, the secretary of agriculture shall give notice to the United States district attorney as prescribed.

(*c*) Any health, food or drug officer or agent of any state, territory or the District of Columbia who shall obtain satisfactory evidence of any violation of the food and drugs act, as provided in section 5 of the act, shall first submit the same to the secretary of agriculture, in order that the latter may cause notice thereof to be given to the guarantor or to the party from whom the sample was obtained, as provided in section 4 of the act.

Regulation 6.—Publication.

(Section 4.)

(*a*) When a judgment of the court shall have been rendered there may be a publication of the findings of the examiner or analyst, together with the findings of the court.

(*b*) This publication may be made in the form of circulars, notices, or bulletins, as the secretary of agriculture may direct, not less than thirty days after judgment.

(*c*) If either party appeals from the judgment of the court before such publication, notice of the appeal shall accompany the publication.

Regulation 7.—Standards for Drugs.

(Section 7.)

(*a*) A drug bearing a name recognized in the United States Pharmacopœia or National Formulary, without any further statement respecting its character, shall be required to conform in strength, quality and purity to the standards prescribed or indicated for a drug of the same name recognized in the United States Pharmacopœia or National Formulary official at the time.

(*b*) A drug bearing a name recognized in the United States Phamacopœia or National Formulary, and branded to show a different standard of strength, quality, or purity, shall not be regarded as adulterated if it conforms to its declared standard.

Regulation 8.—Formulas—Proprietary Foods.

(Section 8, last paragraph.)

(*a*) Manufacturers of proprietary foods are only required to state upon the label the names and percentages of the materials used, in so far as the secretary of agriculture may find to be necessary to secure freedom from adulteration and misbranding.

(*b*) The factories in which proprietary foods are made shall be open at all reasonable times to the inspection provided for in regulation 16.

Regulation 9.—Form of Guaranty.

(Section 9.)

(*a*) No dealer in food or drug products will be liable to prosecution if he can establish that the goods were sold under a guaranty by the manufacturer or dealer from whom purchased.

(*b*) A general guaranty may be filed with the secretary of agriculture by the manufacturer or dealer and be given a serial number, which number shall appear on each and every package of goods sold under such guaranty with the words, "guaranteed under the food and drugs act, June 30, 1906."

(*c*) The following form of guaranty is suggested:

I——— [*or we*], the undersigned, do hereby guarantee that the articles of food or drugs manufactured, packed, distributed or sold by me [*or us*] [specifying the same as fully as possible] are not adulterated or misbranded within the meaning of the food and drugs act, June 30, 1906.

(Signed in ink) ——— ———

[*Name and place of business of dealer, manufacturer, or agent.*]

(*d*) If the guaranty be not filed with the secretary of agriculture as above, it should identify and be attached to the bill of sale, invoice, bill of lading or other schedule giving the names and quantities of the articles sold.

ADULTERATION.

Regulation 10.—Confectionery.

(Section 7.)

(*a*) Mineral substances of all kinds (except as provided in regulation 15) are specifically forbidden in confectionery, whether they be poisonous or not.

(*b*) Only harmless colors or flavors shall be added to confectionery.

(*c*) The term "narcotic drugs" includes all the drugs mentioned in section 8, relating to foods, their derivatives and preparations, and all other drugs of a narcotic nature.

Regulation 11.—Substances Mixed and Packed with Foods.

(Section 7, under "Foods.")

No substance may be mixed or packed with a food product which will reduce or lower its quality or strength. Not excluded under this provision are substances properly used in the preparation of food products for clarification or refining, and eliminated in the further process of manufacture.

Regulation 12.—Coloring, Powdering, Coating, and Staining.

(Section 7, under "Foods.")

(*a*) Only harmless colors may be used in food products.

(*b*) The reduction of a substance to a powder to conceal inferiority in character is prohibited.

(*c*) The term "powdered" means the application of any powdered substance to the exterior portion of articles of food, or the reduction of a substance to a powder.

(*d*) The term "coated" means the application of any substance to the exterior portion of a food product.

(*e*) The term "stain" includes any change produced by the addition of any substance to the exterior portion of foods or drugs which in any way alters their natural tint.

Regulation 13.—Natural Poisons or Deleterious Ingredients.

(Section 7, paragraph 5, under "Foods.")

Any food product which contains naturally a poisonous or deleterious ingredient does not come within the provisions of the food and drugs act, except when the presence of such ingredient is due to filth, putrescence, or decomposition.

Regulation 14.—External Application of Preservatives.

(Section 7, paragraph 5, under "Foods," proviso.)

(*a*) Poisonous or deleterious preservatives shall only be applied externally, and they and the food products shall be of a character which shall not permit the permeation of any of the preservative to the interior, or any portion of the interior, of the product.

(*b*) When these products are ready for consumption, if any portion of the added preservative shall have penetrated the food product, then the proviso of section 7, paragraph 5, under "Foods," shall not obtain, and such food products shall then be subject to the regulations for food products in general.

(*c*) The preservative applied must be of such a character that, until removed, the food products are inedible.

Regulation 15.—Wholesomeness of Colors and Preservatives.

(Section 7, paragraph 5, under "Foods.")

(*a*) Respecting the wholesomeness of colors, preservatives and other substances which are added to foods, the secretary of agriculture shall determine from chemical or other examination, under the authority of the agricultural appropriation act, public No. 382, approved June 30, 1906, the names of those substances which are permitted or inhibited in food products; and such findings, when approved by the secretary of the treasury and the secretary of commerce and labor, shall become a part of these regulations.

(*b*) The secretary of agriculture shall determine from time to time, in accordance with the authority conferred by the agricultural appropriation act, public 382, approved June 30, 1906, the principles which shall guide the use of colors, preservatives and other substances added to foods; and when concurred in by the secretary of the treasury and the secretary of commerce and labor, the principles so established shall become a part of these regulations.

Regulation 16.—Character of the Raw Materials.

(Section 7, paragraph 6, under "Foods.")

(*a*) The secretary of agriculture, when he deems it necessary, shall examine the raw materials used in the manufacture of food and drug products, and determine whether any filthy, decomposed or putrid substance is used in their preparation.

(*b*) The secretary of agriculture shall make such inspections as often as he may deem necessary.

MISBRANDING.

Regulation 17.—Label.

(Section 8.)

(*a*) The term "label" applies to any printed, pictorial or other matter upon or attached to any package of food or drug product or any container thereof.

(*b*) The principal label shall consist, first, of all words which the food and drugs act specifically requires, to wit: The name of the substance or product; the name of place of manufacture, in the case of food compounds or mixtures; words which show that the articles are compounds, mixtures, or blends; the words "compound," "mixture," or "blend," or words designating the substances or their derivatives and proportions required to be named in the case of drugs and foods. All these required words shall appear upon the principal label, with no intervening descriptive or explanatory reading-matter. Second, if the name of the manufacturer and place of manufacture are given, they shall also appear upon the principal label. Third, elsewhere upon the principal label other matter may appear, in the discretion of the manufacturer.

(*c*) The principal label on foods or drugs for domestic commerce shall be printed in English (except as provided in regulation 19), with or without the foreign label in the language of the country where the food or food product is produced or manufactured. The size of type shall be no smaller than eight-point (brevier) caps; provided, that in case the size of the package will not permit the use of eight-point cap type, the size of the type may be reduced proportionately.

(*d*) The form, character and appearance of the labels, except as provided above, are left to the judgment of the manufacturer.

(*e*) Descriptive matter upon the label shall be free from any statement, design or device regarding the article or the ingredients or substances contained therein, or quality thereof, or place of origin, which are false or misleading in any particular.

(*f*) An article containing more than one food product or active medicinal agent is misbranded if named after a single constituent.

In the case of drugs the nomenclature employed by the United States Pharmacopœia or the National Formulary shall obtain.

(*g*) The term "design" or "device" applies to pictorial matter of every description, and to abbreviations, characters or signs for weights, measures, or names of substances.

(*h*) The use of any false or misleading statement, design or device shall not be justified by any statement given as the opinion of an expert or otherwise appearing on any part of the label, nor by any descriptive matter explaining the use of the false or misleading statement, design, or device.

(*i*) The regulation regarding the principal label will not be enforced until October 1, 1907, in the case of labels printed and now on hand, whenever any statement therein contained which is contrary to the food and drugs act, as to character of contents, shall be corrected by a supplemental label, stamp, or paster. All other labels now printed and on hand may be used without change until October 1, 1907.

Regulation 18.—Name and Address of Manufacturer.

(*a*) The name of the manufacturer or producer, or the place where manufactured, except in case of mixtures and compounds having a distinctive name, need not be given upon the label, but, if given, must be the true name and the true place. The words "packed for ———," "distributed by ———" or some equivalent phrase shall be added to the label in case the name which appears upon the label is not that of the actual manufacturer or producer, or the name of the place not the actual place of manufacture or production.

(*b*) When a person, firm or corporation actually manufactures or produces an article of food or drug in two or more places, the actual place of manufacture or production of each particular package need not be stated on the label except when, in the opinion of the secretary of agriculture, the mention of any such place to the exclusion of the others misleads the public.

Regulation 19.—Character of Name.

(Section 8. First under "Foods and Drugs.")

(*a*) A simple or unmixed food or drug product not bearing a distinctive name shall be designated by its common name in the English language, or, if a drug, by any name recognized in the United States Pharmacopœia or National Formulary. No further description of its components or qualities is required, except as to content of alcohol, morphine, etc.

(*b*) The use of a geographical name shall not be permitted in connection with a food product not manufactured or produced in that place, when such name indicates that the article was manufactured or produced in that place.

(*c*) The use of a geographical name in connection with a food product will not be deemed a misbranding when by reason of long usage it has come to represent a generic term and is used to indicate a style, type, or brand; but in all such cases the state or territory where any such article is manufactured or produced shall be stated upon the principal label.

(*d*) A foreign name which is recognized as distinctive of a product of a foreign country shall not be used upon an article of domestic origin except as an indication of the type or style of quality or manufacture, and then only when so qualified that it cannot be offered for sale under the name of a foreign article.

Regulation 20.—Distinctive Name.

(Section 8.)

(*a*) A "distinctive name" is a trade, arbitrary or fancy name which clearly distinguishes a food product, mixture or compound from any other food product, mixture, or compound.

(*b*) A distinctive name shall not be one representing any single constituent or a mixture or compound.

(*c*) A distinctive name shall not misrepresent any property or quality of a mixture or compound.

(*d*) A distinctive name shall give no false indication of origin, character, or place of manufacture, nor lead the purchaser to suppose that it is any other food or drug product.

Regulation 21.—Compounds, Imitations or Blends without Distinctive Names.

(Section 8.)

(*a*) The term "blend" applies to a mixture of like substances, not excluding harmless coloring or flavoring ingredients used for the purpose of coloring and flavoring only.

(*b*) If any age is stated, it shall not be that of a single one of its constituents but shall be the average of all constituents in their respective proportions.

(*c*) Coloring and flavoring cannot be used for increasing the weight or bulk of a blend.

(*d*) A color or flavor cannot be employed to imitate any natural product, or any other product of recognized name and quality.

(*e*) In order that colors or flavors may not increase the volume or weight of a blend, they are not to be used in quantities exceeding 1 pound to 800 pounds of the blend.

(*f*) The term "imitation" applies to any mixture or compound which is a counterfeit or fraudulent simulation of any article of food or drug.

Regulation 22.—Articles without a Label.

(Section 8, paragraph 1, under "Drugs"; paragraph 1, under "Foods.")

It is prohibited to sell or offer for sale a food or drug product which bears no label on the package, or has no descriptive matter or design, or device, if said product be an imitation of or offered for sale under the name of another article.

Regulation 23.—Proper Branding Not a Complete Guaranty.

Packages which are correctly branded as to character of contents, place of manufacture, name of manufacturers, or otherwise, may be adulterated, and hence not entitled to enter into interstate commerce.

Regulation 24.—Incompleteness of Branding.

A compound shall be deemed misbranded if the label be incomplete as to the names of the required ingredients. A simple product does not require any further statement than the name or distinctive name thereof, except as provided in regulations 19 (*a*) and 28.

Regulation 25.—Substitution.

(Sections 7 and 8.)

(*a*) When a substance of a recognized quality commonly used in the preparation of a food or drug product is replaced by another substance not injurious or deleterious to health, the name of the substituted substance shall appear upon the label.

(*b*) When any substance which does not reduce, lower or injuriously affect its quality or strength is added to a food or drug product, other than that necessary to its manufacture or refining, the label shall bear a statement to that effect.

Regulation 26.—Waste Materials.

(Section 8.)

When an article is made up of refuse materials, fragments, or trimmings, the use of the name of the substance from which they are derived, unless accompanied by a statement to that effect, shall be deemed a misbranding. Packages of such materials may be labeled "pieces," "stems," "trimmings," or some similar appellations.

Regulation 27.—Mixtures or Compounds.

(Section 8. First proviso under "Foods," paragraph 1.)

(*a*) The terms "mixtures" and "compounds" are interchangeable and indicate the results of putting together two or more food products.

(*b*) These mixtures or compounds shall not be imitations of other articles, whether simple, mixed, or compound, or offered for sale under the name of other articles. They shall bear a distinctive name and the name and place where the mixture or compound has been manufactured or produced.

(*c*) If the name of the place be one which is found in different states, territories, or countries, the name of the state, territory, or country, as well as the name of the place, must be stated.

Regulation No. 28.—Substances Named in Drugs or Foods.

(Section 8. Second under "Drugs"; second under "Foods.")

(*a*) The term "alcohol" is defined to mean common or ethyl alcohol. No other kind of alcohol is permissible in the manufacture of drugs except as specified in the United States Pharmacopœia or National Formulary.

(*b*) The words alcohol, morphine, opium, etc., and the quantities and proportions thereof, shall be printed in letters corresponding in size with those prescribed in regulation 17, paragraph (*c*).

(*c*) A drug (or food product, except in respect of alcohol) is misbranded in case it fails to bear a statement on the label of the quantity or proportion of any alcohol, morphine, opium, heroin, cocaine, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate, or acetanilid, or any derivatives or preparation of any such substances contained therein.

(*d*) A statement of the maximum quantity or proportion of any such substances present will meet the requirements, provided the maximum so stated does not materially vary from the average quantity or proportion.

(*e*) In case the actual quantity or proportion is stated, it shall be the average quantity or proportion with the variations noted in regulation 29.

(*f*) The following are the principal derivatives and preparations made from the articles which are required to be named upon the label:

ALCOHOL, ETHYL.—Cologne spirits, grain alcohol, rectified spirits, and spirits of wine. *Derivatives:* Aldehyde, ether, ethyl acetate, ethel nitrate, and paraldehyde. *Preparations containing alcohol:* Bitters, brandies, cordials, elixirs, essences, fluid extracts, spirits, syrups, tinctures, tonics, whiskies, and wines.

MORPHINE, ALKALOID.—*Derivatives:* Apomorphine, dionine, peronine, morphine acetate, hydrochloride, sulfate, and other salts of morphine. *Preparations containing morphine:* Bougies, catarrh snuff, chlorodyne, compound powder of morphine, crayons, elixirs, granules, pills, solutions, syrups, suppositories, tablets, triturates, and troches.

OPIUM, GUM.—*Derivatives:* Codeine, alkaloid, hydrochloride, phosphate, sulfate and other salts of codeine. *Preparations containing codeine:* Elixirs, pills, syrups, and tablets.

CANNABIS INDICA.—*Preparations of cannabis indica:* Corn remedies, extracts, mixtures, pills, powders, tablets, and tinctures.

CHLORAL HYDRATE (Chloral, United States Pharmacopœia, 1890). —*Derivatives:* Chloral acetophenonoxim, chloral alcoholate, chloralamid, chloralimid, chloral orthoform, chloralose, dormiol, hypnal, and uraline. *Preparations containing chloral hydrate:* Chloral camphoratum, elixirs, liniments, mixtures, ointments, suppositories, syrups, and tablets.

ACETANILIDE (Antifebrin, Phenylacetamide).—*Derivatives:* Acetphenetidine, citrophen, diacetanilide, lactophenin, methoxyacetanilide, methykacetanilide, para-iodaacetanilide, and phenacetine. *Preparations containing acetanilide or derivatives:* Analgesics, antineuralgics, antirheumatics, cachets, capsules, cold remedies, elixirs, granular effervescing salts, headache powders, mixtures, pain remedies, pills, and tablets.

PREPARATIONS OF OPIUM.—Extracts, denarcotized opium, granulated opium and powdered opium, bougies, Brown mixture, carminative mixtures, crayons, Dover's powders, elixirs, liniments, ointments, paregoric, pills, plasters, syrups, suppositories, tablets, tinctures, troches, vinegars, and wines.

COCAINE, ALKALOID.—*Derivatives:* Cocaine hydrochloride, oleate, and other salts. *Preparations containing cocaine or salts of cocaine:* Coca leaves, catarrh powders, elixirs, extracts, infusion of coca, ointments, paste pencils, pills, solutions, syrups, tablets, tinctures, troches, and wines.

HEROIN.—*Preparations containing heroin:* Syrups, elixirs, pills, and tablets.

ALPHA AND BETA EUCAINE.—*Preparations:* Mixtures, ointments, powders, and solutions.

CHLOROFORM.—*Preparations containing chloroform:* Chloranodyne, elixirs, emulsions, liniments, mixtures, spirits, and syrups.

Regulation 29.—Statement of Weight or Measure.

(Section 8. Third under "Foods.")

(*a*) A statement of the weight or measure of the food contained in a package is not required. If any such statement is printed, it shall be a plain and correct statement of the average net weight or volume, either on or immediately above or below the principal label, and of the size of letters specified in regulation 17.

(*b*) A reasonable variation from the stated weight for individual packages is permissible, provided this variation is as often above as below the weight or volume stated. This variation shall be determined by the inspector from the changes in the humidity of the atmosphere from the exposure of the package to evaporation or to absorption of water, and the reasonable variations which attend the filling and weighing or measuring of a package.

Regulation 30.—Method of Stating Quantity or Proportion.

(Section 8.)

In the case of alcohol, the expression "quantity" or "proportion" shall mean the average percentage by volume in the finished product. In the case of the other ingredients required to be named upon the label, the expression "quantity" or "proportion" shall mean grains or minims per ounce or fluid ounce, and also, if desired, the metric equivalents therefor, or milligrams per gram or per cubic centimeter, or grams or cubic centimeters per kilogram or per liter; provided, that these articles shall not be deemed misbranded if the maximum of quantity or proportion be stated, as required in regulation 28 (*d*).

EXPORTS AND IMPORTS OF FOODS AND DRUGS.

Regulation 31.—Preparation of Food Products for Export.

(Section 2.)

(*a*) Food products intended for export may contain added substances not permitted in foods intended for interstate commerce, when the addition of such substances does not conflict with the laws of the countries to which the food products are to be exported, and when such substances are added in accordance with the directions of the foreign purchaser or his agent.

(*b*) The exporter is not required to furnish evidence that goods have been prepared or packed in compliance with the laws of the foreign country to which said goods are intended to be shipped, but such shipment is made at his own risk.

(*c*) Food products for export under this regulation shall be kept separate, and labeled to indicate that they are for export.

(*d*) If the products are not exported they shall not be allowed to enter interstate commerce.

Regulation 32.—Imported Food and Drug Products.

(Section 11.)

(*a*) Meat and meat products imported into the United States shall be accompanied by a certificate of official inspection of a character to satisfy the secretary of agriculture that they are not dangerous to health, and each package of such articles shall bear a label which shall identify it as covered by the certificate, which certificate shall accompany or be attached to the invoice on which entry is made.

(*b*) The certificate shall set forth the official position of the inspector and the character of the inspection.

(*c*) Such certificate shall be duly authenticated before the United States consul of the district from which the shipment is made.

(*d*) Meat and meat products, as well as all other food and drug products, forbidden entry into or forbidden to be sold or restricted in sale in the country in which made or from which exported, will be refused admission.

(*e*) Meat and meat products which have been inspected and passed through the customs shall have the same privileges with respect to interstate commerce as domestic meat and meat products stamped "inspected and passed" under the meat-inspection act.

Regulation 33.—Declaration.

(*a*) All invoices of food or drug products shipped to the United States shall have attached to them a declaration of the shipper, made before a United States consular officer, as follows:

I, the undersigned, do solemnly and truly declare that I am the ——— [*manufacturer, agent, or shipper*] of the merchandise herein mentioned and described, and that it consists of food or drug products which contain no added substances injurious to health.

These products were grown in ——— [*country*] and manufactured in ——— [*country*] by ——— [*name of manufacturer*] during the year ———, and are exported from ——— [*city*] and consigned to ——— [*city*]. The products bear no false labels or marks, contain no [*some*] added coloring

matter or preservative ——— [*name of added color or preservative*], and are not of a character to cause prohibition or restriction in the country where made or from which exported.

Dated at......, this......day of......, 19..

(Signed) ——— ———

(*b*) In the case of importations to be entered at New York, Boston, Philadelphia, Chicago, San Francisco, and New Orleans, and other ports where food- and drug-inspection laboratories shall be established, this declaration shall be attached to the copy of the invoice forwarded by the shipper to the consignee. In other cases the declaration shall be attached to that copy of the invoice upon which entry is made.

Regulation 34.—Denaturing.

Unless otherwise declared on the invoice or entry, all substances ordinarily used as food products will be treated as such. Shipments of substances ordinarily used as food products intended for technical purposes must be accompanied by a declaration stating that fact, and must be so denatured as to prevent their use as foods.

Regulation 35.—Bond, Imported Foods and Drugs.

Unexamined packages of food and drug products may be delivered to the consignee prior to the completion of the examination to determine whether the same are adulterated or misbranded, upon the execution of a penal bond by the consignee in the sum of the invoice value of such goods with the duty added, for the return of the goods to customs custody.

Regulation 36.—Notification of Violation of the Law.

If the sample on examination be found not to comply with the law, the importer shall be notified of the nature of the violation, the time and place at which final action will be taken upon the question of the exclusion of the shipment, and that he may be present and submit evidence, which evidence (form 15) with a sample of the article shall be forwarded to the bureau of chemistry, at Washington, accompanied by report card (forms 16, 17, 18, 19, and 20).

Regulation 37.—Appeal to the Secretary of Agriculture.

All applications for relief from decisions arising under the execution of the law should be addressed to the secretary of agriculture, and all vouchers or accounts for remuneration for samples shall be filed with the chief of the inspection laboratory, who shall forward the same, with his recommendation, to the Department of Agriculture, for action.

Regulation 38.—Shipment Beyond the Jurisdiction of the United States.

The time allowed the importer for representations regarding the shipment may be extended at his request to permit him to secure such evidence as he desires, provided that this extension of time does not entail any expense to the Department of Agriculture. If at the expiration of this time, in view of the data secured in inspecting the sample and such evidence as may have been submitted by the manufacturers or importers, it appears that the shipment cannot be legally imported into the United States, the secretary of agriculture shall request the secretary of the treasury to refuse to deliver the shipment in question to the consignee, and to require its reshipment beyond the jurisdiction of the United States.

Regulation 39.—Alteration and Amendment of Regulations.

These regulations may be altered or amended at any time, without previous notice, with the concurrence of the secretary of the treasury, the secretary of agriculture, and the secretary of commerce and labor.

Investigation of the Natural Water-supplies of Kansas.

The work of investigating the natural water-supplies of the state under the agreement between the United States Geological Survey and the State Board of Health has begun. Stations for the daily collection of samples of water from the principal rivers of the state have been established at the following places:

River.	Town.	Collector.
Kaw	Holliday	E. W. Johnson.
Arkansas	Arkansas City	A. L. Newman.
Walnut	Winfield	Winfield Roller Mills and Elevator Co.
Osage	Boicourt	J. W. L. Gray.
Solomon	Beloit	A. T. Rodgers.
Blue	Manhattan	Ed Markshaffel.
Verdigris	Coffeyville	D. M. Blair.
Sappa creek	Oberlin	C. S. Maddox.
Spring	Baxter Springs	Paul E. Mason.
Cimarron	Englewood	Col. C. D. Perry.
Arkansas	Great Bend	M. L. Rohrbough.
Chikaskia	Argonia	E. McCann.
Neosho	Emporia	Frank Bacon.

The State Board of Health desires to express its appreciation of the services of the gentlemen who are collecting these daily samples of water, as it is only by their faithfulness in following the instructions for such service that these examinations can be accurately and satisfactorily made. A number of additional stations will be established in the near future.

The contamination of underground waters by cesspools and open privy vaults is receiving attention through the work of Professor Barber, of the University, and it is to be hoped that much light will be thrown on this vexatious problem at an early date, so that intelligent official and legislative action may be applied. Local boards of health or municipalities that have water problems, either of a commercial or sanitary nature, which they desire to have investigated should address the secretary of the State Board of Health, and such questions will receive the attention of Mr. Horatio N. Parker, representing the United States Geological Survey, at the earliest possible date.

Transmission of Disease by Pets.

The Journal of the American Medical Association commented on "The Pathologic Cat," July 21, page 209. Another warning on the danger from pet cats and dogs is from Remlinger and Nouri, of Constantinople, who relate instances from their experience in which the strictest measures of isolation and disinfection were nullified by a pet cat allowed to roam through the house. They state: "There is scarcely a hospital or ward without its cat or cats, and they go from bed to bed and ward to ward seeking for tidbits and caresses, which the convalescents are only too glad to bestow to while away the time." They describe in a communication to the newly founded journal, *Hygiene Gen. et Appliquee*, experiments with cats whose fur was touched with cultures of various bacteria. They found typhoid bacilli still alive and viable up to the seventeenth day after inoculation of the fur. Diphtheria bacilli were viable up to the twenty-fourth day, but were dead by the twenty-seventh, while anthrax bacilli lived and persisted indefinitely. All these germs were found with unattenuated virulence as long as they could be cultivated from the cat's fur. The results of similar tests on dogs were approximately the same. The article concludes with the statement that fondling cats and dogs is an antihygienic habit. Until the habit is abandoned for good, at least the hands should be washed with soap and water whenever one of these animals has been touched.

General Results of Investigations

Showing the Effect of Salicylic Acid and Salicylates upon Digestion and Health.

Circular No. 31, Bureau of Chemistry, United States Department of Agriculture, summarizes the results of the investigations made in experimentally feeding twelve young men, selected for that purpose, upon food preserved with salicylic acid. These young men were volunteers, chiefly from the Department of Agriculture, who voluntarily assumed the obligations imposed by work of this kind. They pledged themselves to abide by the rules and regulations guiding their conduct during the period of observation; to indulge in no unusual exercise or study; to pursue the ordinary tenor of their daily lives without any more variation than is incident to regular habits. They further undertook to eat only the food which was given them at the hygienic table; to collect and deliver for analysis the excreta of their bodies; to observe regular hours respecting sleep and work; and to report the quantity of water which was drunk away from the hygienic table. The conclusions arrived at by Doctor Wiley are summarized in the following, which is taken *verbatim* from the circular above referred to:

"In the conclusions based upon the general observations the same conservatism must be observed, together with the same general reservations respecting the conclusions that are found in part 1 concerning boric acid and borax. While, as described in the borax report, the attempt has been made to control, as far as possible, all the conditions of the experimental work, the difficulties attending the task are so enormous that it is not possible that complete success should be secured. There has, however, been no attempt made to discriminate in the choice of data, all the observations being recorded and the discussion of the individual data based upon the tabular statements being given without prejudice and without bias. The general assumption has been made, as in the previous case, that by reason of the regular habits of life which were imposed upon the subjects the amount of energy developed and the quantity of nourishment expended therein are reasonably constant throughout the experimental period. If these factors vary, as they necessarily must to a certain degree, it is evident that they vary uniformly above or below the average, and hence these variations could not possibly produce any notable effect upon the final result.

"There has been a general concensus of opinion among scientific men, including the medical profession, that salicylic acid and its compounds are very harmful substances, and the prejudice against this particular form of preservative is perhaps greater than against any other material used for preserving foods. This is due not only to the belief in the injurious character of salicylic acid, but perhaps is especially due to the fact that it has in the past been so generally used as an antiseptic. That salicylic acid should be singled out for condemnation among preservatives does not seem to be justified by the data which are presented and discussed in this bulletin. That it is a harmful substance, however, seems to be well established by the data taken as a whole, but it appears to be a harmful substance of less virulence than has been generally supposed. There is no doubt of the fact that salicylic acid is a drug which is often indicated in diseases well established, and, also, perhaps in certain conditions which, while verging on disease, might still be regarded as a state of health. But the administration of salicylic acid as a medicine should be controlled exclusively by the medical profession, and, while it is a remedy well established in the pharmacopœia and especially prized for its effect upon rheumatism and gout, it does not seem that there should be any warrant in this fact for its promiscuous use in foods, even if it were harmless.

"The data show very clearly that salicylic acid and salicylates appear to exert an exciting influence upon the activities which take place in the alimentary canal, stimulating the organs to greater effort, and this stimulation leads at first to increased digestion and absorption of the foods which are introducted into the stomach. In the light of the data which are exhibited, salicylic acid may be said to increase the solubility and absorption of the food in the alimentary canal, so that larger parts of the nutrients taken into the stomach actually enter the circulation.

"The data which show the effects just noted also indicate that the general effect upon the system is depressing, in that the tissues are broken down more rapidly than they are built up, and thus the normal metabolic processes are interfered with in a harmful way. The administration of the salicylic acid is attended by a gradual decrease in the weight of the subjects, although the quantity of food elements administered during the preservative the after-periods is slightly increased, which fact, together with a greater degree of absorption of food elements, should have resulted in a slight increase in weight. This increase in weight, however, does not occur, and the disturbing influences of the salicylic acid upon metabolism, although not very great, are specifically demonstrated.

"The final conclusion in this matter, therefore, is that the unenviable position which salicylic acid has heretofore held among preservatives, in being regarded as the most injurious of all, is perhaps, to a certain extent, undeserved. Like other ordinary preservatives, it is not one which can be classed as a poison in the usual sense of the word. When used as a medicine in many cases of derangement of health it is, like other chemical preservatives, often highly beneficial when properly prescribed by a competent physician. It is, when used in the food, at first an apparent stimulant, increasing the solubility and absorption of the common food elements from the alimentary canal. It soon, however, loses its stimulating properties and becomes a depressant, tending to break down the tissues of the body more rapidly than they are built up. It disturbs the metabolic processes, in most cases producing conditions which are not normal and which apparently are not beneficial. It has a tendency to diminish the weight of the body and to produce a feeling of discomfort and malaise which, while not marked, is distinctly indicative of injury. In some cases these symptoms of malaise approach illness, and while not always diagnostic are sufficiently common to unmistakably point to the salicylic acid as their origin. It places upon the excretory organs, especially the kidneys, an additional burden which they are not able to bear and which cannot possibly result in any good, but on the contrary must necessarily, by thus increasing the burden of the kidneys, finally result in injury, though perhaps with the use of very small quantities of the preservative those organs would continue to perform their functions for many years before finally breaking down.

"This work is offered as an unbiased study of all the data recorded, both of those which appear to be in favor of the use of salicylic acid and those which appear to be against its use, and leads to the inevitable conclusion that salicylic acid is a substance which, when added to foods even in small quantities, exerts a depressing and harmful influence upon the digestion and health and the general metabolic activities of the body. Further, there appears to be no necessity for its use, as food can be preserved in unobjectionable ways without its aid. Its indiscriminate use would tend to carelessness in the quantities employed, thus increasing the dangers to which the consumer is subjected. Also, its use in the preservation of foods tends to induce carelessness and indifference on the part of the manufacturer, as, when a chemical antiseptic is employed, many of the processes necessary to the proper selection, cleaning and preservation of foods may be omitted. The addition of salicylic acid and salicylates to foods is therefore a process which is reprehensible in every respect, and leads to injury to the consumer, which, though in many cases not easily measured, must finally be productive of great harm."

Antitoxic Serums.

The large number of cases of diphtheria and smallpox in the state at the present time (November) emphasizes the necessity of the liberal use of diphtheritic antitoxin and vaccine virus. There are still found in every community people who either flatly refuse to use either of these prophylactic agents or who do so under protest, and exercise great concern as to whether or not poisonous material may not be inoculated which will be more dangerous than either of these diseases in themselves. If it were generally known that the preparation of diphtheritic antitoxin and vaccine virus is under rigid government inspection and standardization, the fears and protests of many of these people would be allayed. It is therefore apropros at this time to publish the federal law concerning the inspection of these remedies, and it is trusted that county health officers and physicians in general will give the widest publicity to this fact.

In this connection, it has long been our opinion that the state should furnish diphtheritic antitoxin and vaccine virus free to the citizens of the state. Laboratories for the manufacture of these agents could without very much additional cost be maintained at the State University, where they could be manufactured at a minimum cost. Many valuable lives might be saved when these remedies can be brought within the reach of all those who are in need of them. We invite an expression from health officers and physicians of the state as to the advisability of such an institution. Following is the federal law providing for inspection and standardization of serum and virus:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That from and after six months after the promulgation of the regulations authorized by section 4 of this act no person shall sell, barter, or exchange, or offer for sale, barter or exchange in the District of Columbia, or send, carry, or bring for sale, barter or exchange from any state, territory or the District of Columbia into any state, territory, or the District of Columbia, or from any foreign country into the United States, or from the United States into any foreign country, any virus, therapeutic serum, toxin, antitoxin or analogous product applicable to the prevention and cure of diseases of man, unless (*a*) such virus, serum, toxin, antitoxin or product has been propagated and prepared at any establishment holding an unsuspended and unrevoked license, issued by the secretary of the treasury as hereinafter authorized, to propagate and prepare such virus, serum, toxin, antitoxin or product for sale in the District of Columbia, or for sending, bringing or carrying from place to place aforesaid; nor (*b*) unless each package of such virus, serum, toxin, antitoxin or product is plainly marked with the proper name of the article contained therein, the name, address and license number of the manufacturer, and the date beyond which the contents cannot be expected beyond reasonable doubt to yield their specific results; provided, that the suspension or revocation of any license shall not prevent the sale, barter or exchange of any virus, serum, toxin, antitoxin or product aforesaid which has been sold and delivered by the licentiate prior to such suspension or revocation, unless the owner or custodian of such virus, serum, toxin, antitoxin or product aforesaid has been notified by the secretary of the treasury not to sell, barter or exchange the same.

2. That no person shall falsely label or mark any package or container of any virus, serum, toxin, antitoxin or product aforesaid; nor alter any label or mark on any package or container of any virus, serum, toxin, antitoxin or product aforesaid so as to falsify such label or mark.

3. That any officer, agent or employee of the treasury department, duly detailed by the secretary of the treasury for that purpose, may during all reasonable hours enter and inspect any establishment for the propagation and preparation of any virus, serum, toxin, antitoxin or product aforesaid for sale, barter or exchange in the District of Columbia, or to be sent, carried or brought from any state, territory or the District of Columbia into any other state or territory or the District of Columbia, or from the United States into any foreign country, or from any foreign country into the United States.

4. That the surgeon-general of the army, the surgeon-general of the navy and the supervising surgeon-general of the marine-hospital service be, and they are hereby, constituted a board, with authority, subject to the approval of the secretary of the treasury, to promulgate from time to time such rules as may be necessary in the judgment of said board to govern the issue, suspension and revocation of licenses for the maintenance of establishments for the propagation and preparation of viruses, serums, toxins, antitoxins, and analogous products, applicable to the prevention and cure of diseases of man, intended for sale in the District of Columbia, or to be sent, carried or brought for sale from any state, territory or the District of Columbia into any other state, territory, or the District of Columbia, or from the United States into any foreign country, or from any foreign country into the United States; provided, that all licenses issued for the maintenance of establishments for the propagation and preparation in any foreign country of any virus, serum, toxin, antitoxin, or product aforesaid, for sale, barter or exchange in the United States, shall be issued upon the condition that the licentiates will permit the inspection of the establishments where said articles are propagated and prepared, in accordance with section 3 of this act.

5. That the secretary of the treasury be, and he is hereby, authorized and directed to enforce the provisions of this act, and of such rules as may be made by authority thereof; to issue, suspend and revoke licenses for the maintenance of establishments aforesaid, and to detail for the discharge of such duties such officers, agents and employees of the treasury department as may in his judgment be necessary.

6. That no person shall interfere with any officer, agent or employee of the treasury department in the performance of any duty imposed upon him by this act, or by regulations made by authority thereof.

7. That any person who shall violate, or aid or abet in violating, any of the provisions of this act shall be punished by a fine not exceeding —— —— one year, or by both such fine and imprisonment, in the discretion of the court.

8. That all acts and parts of acts inconsistent with the provisions of the act be and the same are hereby repealed.

Approved July 1, 1902, United States Statutes at Large, vol. 32, pt. 1, p. 728.

Additional Data

In the Study of the Typhoid Fever Epidemic at Ellinwood, Kan.

A report of the sanitary inspection of the city of Ellinwood, Barton county, Kansas, together with its interpretation as the cause of typhoid fever which prevailed at that point, appeared in our May bulletin. The conclusions arrived at were that the source of water-supply, which was in most instances the first stratum underlying the city, was being contaminated by sewage from cesspools which drained their contents into this water stratum. Examinations of samples of water gathered from a number of wells clearly indicate such contamination. It was therefore recommended that uncemented cesspools be condemned and abolished, and that the residents of the city deepen their wells, so as to get their supply from the second stratum of water, some thirty or forty feet below the polluted stratum.

In order further to test whether or not the contents of the cesspools were polluting the first layer of water, it was suggested to Dr. G. O. Speirs, a physician of that place, to add a solution of 100 pounds of salt to a cesspool, and to test for chlorids in the near-by wells, first having ascertained the quantitative content of chlorid before putting in the solution. In conformity with this request, the following letter was received from Doctor Speirs, which is herewith made a part of the study.

ELLINWOOD, KAN., November 19, 1906.

S. J. Crumbine, M. D., Topeka, Kan.:

DEAR DOCTOR—In compliance with your request, I poured 100 pounds of salt in solution into a cesspool having two wells near it. One well is about

eighty feet directly east and the other one 120 feet southeast from the cesspool. A sample of water was taken from each well before putting the salt in the cesspool and again ten days after.

The test used for determining the amount of chlorids was made by adding 1 cc. potassic chromate sol. (2 gm. in 100 cc. distilled water) to 100 cc. of the water to be tested. A standard silver solution (4.8 gm. silver nitrate dissolved in one liter distillled water) was run in from a burette until a red tint appeared. One cc. standard silver solution precipitates one mgm. chlorin.

The results of the tests are as follow: First well (eighty feet east of cesspool).—Before adding salt to cesspool, 114 mgm. chlorids per liter; ten days after adding salt, 160 mgm. chlorids per liter. Second well (120 feet southeast of cesspool).—Before adding salt to cesspool, 126 mgm. chlorids per liter; ten days after adding salt, 166 mgm. chlorids per liter.

By using the same test, the water from a surface well 29 feet deep in another part of town showed 152 mgm. chlorids per liter. The water from a drilled well 88 feet deep, 45 feet of which is through sandstone, showed 62 mgm. chlorids per liter.

The large amount of chlorids found in the water, especially from the deep wells, is probably accounted for by the many salt deposits in this section of the state.

Last summer a soda dispenser of this place, to conveniently dispose of the salt water from his ice-cream kegs, dug a hole in his cellar down to the surface-water. In a short time the water from a well ten or fifteen feet east of this hole became so salty that it could not be used.

The samples of water have been sent to Professor Barber, as requested.

Very truly yours, G. O. SPEIRS.

It would seem that this test is a most conclusive one, and emphasizes the necessity of the abandonment of all uncemented cesspools, or, on the other hand, the abandonment of all wells getting their supply from the first stratum of water.

Cultures have recently been made in the city of Ellinwood, and have been sent to the laboratories of the State University for further elucidation of this subject.

A communication from Doctor Crumbine, secretary of the Kansas State Board of Health, was received, showing what had been done by the Kansas Board relative to car sanitation, and asking the cooperation of the Iowa board in securing for the traveling public the best possible sanitary conditions. The rules and regulations referred to by Doctor Crumbine were those adopted by the Indiana State Board of Health. The communication was referred to Doctor Linn, chairman of the committee on car sanitation, with instructions to report at next meeting.—***Bulletin Iowa State Board of Health.***

New Law for Registration of Births and Deaths in Kansas.

It is a well-known fact that accurate and complete vital statistics of Kansas can never be gathered under the present law and system, and as accurate statistics must be the underlying basis for proper interpretation of sanitary conditions in the state, it follows that such interpretation cannot be accurately made, nor the appropriate preventive measures applied, until such time as exact data can be secured. For the purpose of aiding in the enactment of satisfactory laws, and to the end that the United States may obtain a satisfactory and complete system of registration, and to the end that this state, together with other states, may obtain a complete and satisfactory system of registration, such as exists in all civilized countries, the United States census bureau has published a pamphlet on the legislative requirements of registration of vital statistics, containing the essential requirements of registration as approved by the American Public Health Association, the Conference of State and Provincial Boards of Health of North America, and the American Medical Association, and representing the concrete opinion of the entire body of sanitary and registration authorities of this country. In order that states may be induced to cooperate effectively with each other and the national government, for the purpose of obtaining accurate and trustworthy vital statistics, Congress has recently passed the following resolution, which resolution should receive the favorable consideration of the Kansas legislature this winter:

RESOLUTION BY CONGRESS.

JOINT RESOLUTION requesting state authorities to cooperate with the census office in securing a uniform system of birth and death registration.

WHEREAS, The registration of births and deaths at the time of their occurrence furnishes official record information of much value to individuals; and

WHEREAS, The registration of deaths, with information upon certain points, is essential to the progress of medical and sanitary science in preventing and restricting disease and in devising and applying remedial agencies; and

WHEREAS, All of the principal countries of the civilized world recognize the necessity for such registration and enforce the same by general laws; and

WHEREAS, Registration in the United States is now confined to a few states, as a whole, and the larger cities under local laws and ordinances which differ widely in their requirements; and

WHEREAS, It is most important that registration should be conducted under laws that will insure a practical uniformity in the character and amount of information available from the records; and

WHEREAS, The Public Health Association and the United States census office are now cooperating in an effort to extend the benefits of registration and to promote its efficiency by indicating the essential requirements of legislative enactments designed to secure the proper registration of all deaths and births and the collection of accurate vital statistics, to be presented to the attention of the legislative authorities in non-registration states, with the suggestion that such legislation be adopted: now, therefore,

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the senate and house of representatives of the United States hereby express approval of this movement and request the favorable consideration and action of the state authorities, to the end that the United States may attain a complete and uniform system of registration.

Approved February 11, 1903.

A bill prepared by the bureau of census, Department of Commerce and Labor, will be presented to the legislature this winter to provide for the adequate registration of births and deaths in this state.

Food Inspection.

From the London correspondent of the Journal of the American Medical Association.

Since the Chicago revelations the subject of food inspection has received considerable attention from the public health authorities. At the annual meeting of the Society of Medical Officers of Health, Dr. D. S. Davies read an important paper on "The Administrative Control of Food." He indicated the difficulties of carrying out a proper inspection of meat. After seizure careful examination should be made by the health officer and full notes taken of the pathologic condition of the meat. Before any further proceedings are taken the vendor should have ample means of examination. Private slaughter-houses should be gradually abolished, and there should be a rigid system of marking and stamping all inspected meat, home and foreign. Foreign meat should be required to comply absolutely with English standards, and there should be some guaranty that it has passed a proper inspection. More adequate inspection of tinned meats and similar foods is urgently needed. There is evidence of much unwholesome preparation, by no means confined to America. Even in London he has found tuberculous pus in widely advertised sausages, diseased horse flesh in potted meat, and decomposing animal matter in potted salmon and shrimp. The only way of effective administrative control of the preparation of these and other foods is inspection at the time of manufacture of their constituents and inspection of the premises. There should be a distinctive inspection mark. Name and date of canning should be stamped on every tin. The regulations necessary for the protection of the consumer will require fresh legislation. It is astonishing, he said, how little is done to protect the milk consumer, and that the dairy industry should be allowed to pass out of our hands for the lack of a little cooperation and common-sense administrative control, such as is exercised in Denmark.

An Excellent Creed.

American School of Home Economics.

We believe—

That right living should be the fourth "R" in education.

That home-making should be regarded as a profession.

That health is more the business of the individual than of the physician.

That most illness results from carelessness, ignorance, or intemperance of some kind.

That as many lives are cut short by unhealthful food and diet as through strong drink.

That the upbringing of children demands as much study as the raising of cattle.

That on the home foundation is built all that is good in state or individual.

That the spending of money is as important as the earning of money.

That economy does not mean spending a small amount, but in getting the largest returns for the money expended.

That the home-maker should be as alert to make progress in her life-work as the business or professional man.

That the most profitable, the most interesting, study for women is the home, for in it center all the issues of life.

That the study of home problems may be made of no less cultural value than the study of history or literature, and of much more immediate value.

So I will trudge with heart elate,
  And feet with courage shod;
For that which men call chance and fate
  Is the handiwork of God.

—Alice Cary.

Earthquake Psychoses.

The following editorial paragraphs are selected from the *Pacific Medical Journal* for May and June, 1906:

FRIENDSHIP.—A noticeable fact in connection with our recent catastrophe is the cementing of friendship. Not only has this great crisis brought out the best in everybody, but it has also established friendships and crystallized acquaintance into friendship. Every one is willing to share his loaf of bread. We are social creatures. A man in a disaster dislikes to be alone. He seeks companionship; he seeks to share his friend's burden.

MARRIAGE.—From the first few hours of our disaster until the present time the increase in marriages has been something phenomenal. Estrangements grew into mutual understanding of respect, acquaintance grew into friendship, "understandings" grew into engagements, pity grew into love and engagements, and engagements were rapidly consummated on a brick pile or on a lawn. Even the romantic trips of three miles out to sea were forgotten and the marriage knot was hastily tied. One rush order of 200 wedding rings was sent to New York from San Francisco a few hours after the earthquake. The marriages in San Francisco and vicinity have increased at least ninety-five per cent. during the months of April and May.

BIRTH-RATE.—The shock brought about an enormous increase in the birth-rate. Dozens of children were born within a few hours after the first shock and for twenty-four hours to a week thereafter premature births occurred by the hundreds. This condition is not so difficult of explanation.

DEATHS.—Excluding the number of victims killed by falling chimneys and the collapse of houses, the death-rate has distinctly diminished, thanks to the watchful and efficient care of the health commissioners of San Francisco. The neurasthenics, the pseudo-paralytics, the hypochondriacs, all were cured in an astonishingly short space of time. These people suddenly became well and strong and active, once more taking an interest in life, in their surroundings, and in their friends.

Be a stalwart, staunch and true;
Be honest in everything you do;
Be a man among the few;
Now, go ahead; it 's up to you.
— *Yoeman Shield.*

Notes.

In battle or business, whatever the game,
In law or in love, it 's ever the same;
In your struggle for power, or scramble for pelf,
Let this be your motto: "Rely on yourself."
—*John G. Saxe.*

When you want to see real faults, look in.

Be strong and of good courage.—*St. Paul.*

Henceforth I whimper no more.— *Walt Whitman.*

"A cheerful failure is really worth more than a morbid success."

"Success, like misfortune, is apt to come without invitation and leave without notice."

"You may beat the tom-tom all your life, and then discover that most of the people never heard you."

Publicity has squeezed surplus water out of Kansas creamery butter. Why not try it on watered stocks and bonds?

Modern lay anatomy—"An iron constitution; nerves of steel; heart of stone; wooden head; lots of sand; all wool and a yard wide."

"A little bit of hope makes a rainy day look gay,
A little bit of charity makes glad the weary way."

WEALTH.

⁂

Poor, am I? Nay, I am rich, though penniless. I have my wish—can all your wealth buy more? You own the land. I own the landscape. It is well. I would rather hear the laughter of my little boy, the song that springs involuntarily to his mother's lips; I would rather be cashier of a bank of kisses with a billion in reserve; I would rather direct a syndicate of smiles paying daily dividends of honest joy; I would rather be treasurer of a trust company having a paid-up capital of splendid hope and a charter perpetual in this world and the next—I would rather own these DOLLARLESS RESOURCES *of content than to be able to draw my check for a million with which I could purchase neither* LOVE, HAPPINESS, *nor* IMMORTALITY.

—Burritt Hamilton.

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OF THE
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No. 12. DECEMBER, 1906. VOL. 2.

We
Wish you
A HAPPY NEW YEAR.

THE FOUR BEST DISINFECTANTS.

The Best Natural Disinfectant.—*Sunshine.*
The Best Germ Disinfectant.—*Formaldehyde.*
The Best Physical Disinfectant.—*Soap.*
The Best Moral Disinfectant.—*Publicity.*

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VITAL STATISTICS

Reported to the Kansas Board of Health for November, 1906.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
*Allen												
Anderson	0	0	1	1	1	0	6	0	0	0	0	0
Atchison	1	1	0	0	5	0	0	0	0	0	0	0
*Barber												
Barton	0	0	2	0	2	1	0	0	0	0	0	0
Bourbon	4	4	3	2	5	0	0	0	0	0	0	0
Brown	0	0	0	0	12	0	2	0	0	0	0	0
Butler	2	2	1	0	3	0	0	0	2	0	0	0
Chase	5	0	0	0	1	0	10	0	0	0	0	0
Chautauqua	0	0	0	0	2	0	13	0	0	0	0	0
Cherokee	2	2	1	0	8	4	2	0	0	0	0	0
Cheyenne	0	0	1	1	0	0	0	0	6	0	0	0
*Clark												
†Clay												
Cloud	0	0	2	0	3	1	2	0	0	0	1	0
Coffey	2	0	3	2	0	0	0	0	0	0	0	0
Comanche	0	0	0	0	0	0	4	1	0	0	0	0
Cowley	2	2	1	1	3	2	2	1	0	0	0	0
Crawford	0	0	2	2	2	2	0	0	0	0	0	0
Decatur	0	0	2	1	0	0	1	0	0	0	0	0
Dickinson	0	0	0	0	2	0	2	0	0	0	0	0
Doniphan	0	0	0	0	0	0	1	0	0	0	0	0
Douglas	0	0	0	0	19	1	2	0	0	0	0	0
Edwards	2	1	3	2	0	0	0	0	0	0	0	0
Elk	0	0	0	0	1	0	0	0	0	0	0	0
†Ellis												
†Ellsworth												
Finney	2	2	0	0	0	0	5	0	0	0	0	0
*Ford												
Franklin	0	0	4	0	0	0	0	0	0	0	0	0
Geary	0	0	2	0	8	0	3	0	0	0	0	0
†Gove												
Graham	1	1	0	0	0	0	0	0	0	0	0	0
†Grant												
Gray	0	0	2	0	0	0	0	0	0	0	0	0
‡Greeley												
Greenwood	0	0	0	0	30	0	0	0	0	0	0	0
Hamilton	0	0	0	0	3	0	0	0	0	0	0	0
Harper	0	0	0	0	1	0	0	0	0	0	1	0
Harvey	0	0	0	0	1	0	1	0	0	0	0	0
Haskell	0	0	1	1	0	0	0	0	0	0	0	0
†Hodgeman												
Jackson	0	0	0	0	0	0	2	0	0	0	0	0
Jefferson	0	0	0	0	0	0	4	0	0	0	0	0
Jewell	4	1	3	0	0	0	0	0	0	0	0	0
Johnson	0	0	2	1	1	0	3	2	0	0	0	0
Kearny	1	1	3	0	0	0	0	0	2	0	0	0
Kingman	0	0	1	1	13	0	4	0	0	0	2	0
†Kiowa												
Labette	1	1	0	0	3	1	0	0	0	0	0	0
Lane	0	0	1	0	0	0	0	0	0	0	0	0
Leavenworth	0	0	0	0	16	1	0	0	2	0	0	0
Lincoln	0	0	0	0	9	2	0	0	0	0	0	0
Linn	0	0	0	0	5	2	0	0	0	0	0	0
Logan	0	0	0	0	0	0	2	0	0	0	0	0
Lyon	0	0	0	0	9	0	7	0	0	0	0	0

CONTAGIOUS AND INFECTIOUS DISEASES — Concluded.

COUNTIES.	Tuberculosis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Marion	0	0	0	0	16	0	2	0	0	0	0	0
Marshall	0	0	0	0	2	0	0	0	0	0	0	0
†McPherson												
Meade	0	0	0	0	1	0	0	0	0	0	0	0
Miami	1	1	0	0	0	0	0	0	0	0	0	0
Mitchell	0	0	0	0	1	0	0	0	0	0	0	0
Montgomery	3	3	7	3	5	1	3	0	4	0	0	0
Morris	1	1	1	1	6	0	11	0	0	0	0	0
†Morton												
Nemaha	1	1	1	0	0	0	1	0	0	0	0	0
*Neosho												
†Ness												
Norton	0	0	3	0	0	0	0	0	0	0	0	0
Osage	1	0	0	0	1	0	1	1	0	0	0	0
Osborne	5	1	0	0	2	0	2	0	6	0	0	0
†Ottawa												
Pawnee	0	0	0	0	0	0	1	0	0	0	4	0
Phillips	0	0	2	0	0	0	1	0	0	0	0	0
Pottawatomie	0	0	1	0	2	1	1	0	0	0	0	0
Pratt	4	0	6	2	0	0	10	1	0	0	0	0
†Rawlins												
Republic	1	1	2	1	32	3	6	0	0	0	1	0
Reno	0	0	0	0	2	0	4	0	0	0	0	0
Rice	6	0	2	0	0	0	0	0	0	0	2	0
Riley	2	1	0	0	19	1	4	0	0	0	2	0
Rooks	1	0	0	0	0	0	0	0	0	0	0	0
*Rush									0	0		0
Russell	0	0	0	0	2	1	0	0	0	0	0	0
Saline	0	0	0	0	9	1	1	0	0	0	0	0
†Scott												
Sedgwick	0	0	0	0	0	0	0	0	2	0	0	0
Seward	0	0	0	0	0	0	5	0	0	0	0	0
Shawnee	0	0	0	0	2	1	3	0	0	0	0	0
Sheridan	0	0	0	0	0	0	1	0	0	0	0	0
†Sherman												
Smith	2	2	7	3	0	0	1	0	0	0	0	0
Stafford	0	0	0	0	0	0	3	0	0	0	0	0
‡Stanton												
Stevens	0	0	0	0	0	0	0	0	11	0	0	0
Sumner	0	0	1	1	12	1	2	0	0	0	0	0
*Thomas												
Trego	1	0	0	0	5	1	1	0	0	0	0	0
Wabaunsee	1	1	0	0	5	1	2	0	0	0	0	0
*Wallace												
Washington	0	0	1	0	0	0	6	0	2	0	0	0
Wichita	1	0	0	0	0	0	0	0	0	0	0	0
Wilson	0	0	14	1	17	1	0	0	0	0	0	0
†Woodson												
Wyandotte	0	0	0	0	1	0	0	0	0	0	0	0
Cities:												
*Atchison												
Coffeyville	1	1	0	0	4	0	0	0	0	0	0	0
*Fort Scott												
Kansas City	12	12	50	4	51	2	4	0	0	0	2	0
Leavenworth	2	2	0	0	9	0	1	0	0	0	0	0
*Parsons												
Topeka	1	1	1	1	26	2	10	0	0	0	0	0
Wichita	0	0	0	0	7	1	5	0	4	0	0	0
State Institutions,	2	1	0	0	0	0	0	0	0	0	0	0
Totals	78	49	139	82	402	85	170	6	41	0	15	0
For Nov., 1905	82	48	155	87	442	62	106	3	278	0	22	0

* No report. † No contagious diseases in county. ‡ No health officer.

FOOD ANALYSES, No. V.

The analyses of food and drug products made at the University and State Agricultural College are presented in this bulletin for the information of the public, and will be found interesting and instructive reading. These analyses, together with such as have been published hitherto, emphasizes the necessity, were such needed, of the passage of a new pure-food-and-drug law which will be comprehensive in its scope and be in uniformity, so far as conditions will permit, with the national law, and it is to be hoped that the health officials and all good citizens will use their influence with their local representative and senator and put forth such personal effort as will insure the early passage of the bill to be presented to the legislature along the lines above indicated.

LAWRENCE, KAN., December 20, 1906.

Dr. S. J. Crumbine, Secretary State Board of Health, Topeka:

DEAR SIR—I herewith present a report of some recent work in food analysis.

MILK USED IN LAWRENCE.

On account of the fact that the student population of the city makes use of a large quantity of milk, it was thought to be worth while to determine the amount of butter-fat in a number of samples used at the different student clubs. The results are as follows:

No. 2768, butter-fat, 4 per cent.; No. 2769, butter-fat, 5.8 per cent.; No. 2770, butter-fat, 4.2 per cent.; No. 2771, butter-fat, 4.6 per cent.; No. 2772, butter-fat; 3.8 per cent.; No. 2773, butter-fat, 4.1 per cent.; No. 2775, butter-fat, 5.2 per cent.; No. 2776, butter-fat, 7 per cent.; No. 2777, butter-fat, 1.5 per cent.; No. 2778, butter-fat, 5 per cent.; No. 2779, butter-fat, 3.5 per cent.

Analyses were also made of the milk furnished, October 31, by some of the milkmen and other dealers of the city of Lawrence, at the request of the mayor and common council:

No. 2798. H. H. Brown's milk contained: Butter-fat, 5.2 per cent.; total solids, 14.88 per cent.; solids not fat, 9.68 per cent.

No. 2797. John Fritzel's milk contained: Butter-fat, 5.2 per cent.; total solids, 14.10 per cent.; solids not fat, 8.90 per cent.

No. 2800. W. E. Parish's milk contained: Butter-fat, 4.8 per cent.; total solids, 14.61 per cent.; solids not fat, 9.81 per cent.

No. 2801. Chas. E. Brown's milk contained: Butter-fat, 5.2 per cent.; total solids, 15.6 per cent.; solids not fat, 9.86 per cent.

No. 2802. Lewis Rocklund's milk contained: Butter-fat, 3.8 per cent.; total solids, 13.91 per cent.; solids not fat, 10.11 per cent.

No. 2803. Ed. Wilson's milk contained: Butter-fat, 2.1 per cent.; total solids, 11.05 per cent.; solids not fat, 8.95 per cent.

No. 2804. J. A. Ewing's milk contained: Butter-fat, 3.7 per cent.; total solids, 12.88 per cent.; solids not fat, 9.18 per cent.

No. 2805. O. L. Harding's milk contained: Butter-fat, 4.6 per cent.; total solids, 14.31 per cent.; solids not fat, 9.91 per cent.

No preservatives were found in any of the above samples.

The following analyses were made of milk obtained in the city of Lawrence November 20, 1906:

No. 2838. W. A. Petit & Son's milk contained: Butter-fat, 4.40 per cent.; total solids, 14.41 per cent.; solids not fat, 10.01 per cent.

No. 2839. C. Stone's milk contained: Butter-fat, 5.90 per cent.; total solids, 15.96 per cent.; solids not fat, 10.06 per cent.

No. 2840. C. Epley's milk contained: Butter-fat, 5.90 per cent.; total solids, 15.35 per cent.; solids not fat, 9.45 per cent.

The following samples were obtained November 28, 1906:

No. 2841. Jerry Ewer's milk contained: Butter-fat, 4.09 per cent.; total solids 14.34 per cent.; solids not fat. 9.44 per cent.

No. 2842. H. Weyermiller's milk contained: Butter-fat, 2.05 per cent.; total solids, 12.74 per cent.; solids not fat, 10.24 per cent.

No. 2843. C. Epley's milk contained: Butter-fat, 3 per cent.; total solids, 12.39 per cent.; solids not fat, 9.39 per cent.

ICE-CREAM.

An examination of the literature from the Department of Agriculture and from various agricultural experiment stations shows that comparatively little has been done in the way of investigating the composition of the ice-cream which is on the market. This neglect may be due to the fact that ice-cream is sometimes considered as belonging to the same general class as cake, candy, or confectionery, and so, if the taste is agreeable and no unwholesome ingredients are present, the product is not questioned. Whether there should be criticism or not depends largely upon whether ice-cream belongs to the class of foods or simply condiments—the substances having an agreeable taste. If it is considered as having any food value whatever, and so is to be classed as a nutrient, there is an opportunity for a great range in the amount of valuable food which it contains.

The most expensive ingredient of ice-cream is the butter-fat, and originally, no doubt, ice-cream was made by the use of sweetened cream, slightly diluted and frozen. If the butter-fat is largely replaced by gelatin, a substance which has little food value, the appearance of the product is not very much changed, but the cost of production is much decreased, and the nutrient value is much lower.

The substances commonly used in compounding ice-cream are the cream, which may contain as high as forty-five per cent. of butter-fat, sugar, milk, eggs, water, and flavoring material, such as vanilla, chocolate, lemon, or a natural fruit. In addition to the above, a variety of thickening materials have come into common use, such as cooked starch, gelatin, creamy substances containing lime, "junket," and various proprietary substances, consisting largely of gums.

The official standard of the United States Department of Agriculture for cream is that it shall not contain less than eighteen per cent. of butter-fat. For ice-cream the following is the definition: "Ice-cream is a frozen product, made from cream and sugar, with or without a natural flavoring, and contains not less than fourteen per cent. of milk-fat." Nothing is said here in regard to the use of starch, gelatin, or other thickening material, which means, according to the government standard, that a product that contains substances of this kind, cannot be called ice-cream. There is probably no objection to selling it as a "frozen custard" or "compound ice-cream," or "gelatinized ice-cream." In some states the standard for butter-fats is lower than that required by the Department of Agriculture. While it would be absurd to make ice-cream from a cream that contained thirty per cent. of fat, as this is too rich, not so agreeable, and probably not so readily digested, genuine ice-cream surely ought to contain not less then twelve per cent. of butter-fat. For the determination of gelatin the method of Stokes has been found to be satisfactory. This test is said by the author to be delicate to 1 part in 10,000.

Samples of ice-cream have been received from eight cities of the state. The result of the analysis is as follows:

Ice-cream from Chanute.

No. 2757. (Made in Parsons.) Sold by the Dermy Drug Company. This sample contains 7.2 per cent. of butter-fat and a considerable quantity of gelatin.

No. 2758. Sold by P. Stineman. This sample contains 6 per cent. of butter-fat and a considerable quantity of gelatin.

No. 2759. Sold by Fitzpatrick. This sample contains 3 per cent. of butter-fat and a small quantity of thickening material.

No artificial preservatives were found in the above samples.

No. 2760. (Made in Ottawa.) Sold by the Brown pharmacy. This sample contains 13.8 per cent. of butter-fat and some gelatin.

No. 2761. Sold by Tucker & Alexander. This sample contains 9.6 per cent. of butter-fat and a large quantity of gelatin.

No preservatives found.

Ice-cream from Wichita.

No. 2762. Sold by the Wichita Creamery Co. This sample contains 12 per cent. of butter-fat and a very small quantity of thickening material.

No. 2763. Sold by the Bissantz Ice Cream Co. This sample contains 8.4 per cent. of butter-fat and considerable gelatin.

No. 2764. Sold by E. B. Messerve kandy kitchen. This sample contains 9.6 per cent. of butter-fat and a small quantity of gelatin.

No. 2765. Sold by Steffen & Bretck Ice and Ice Cream Co. This sample contains 12.6 per cent. of butter-fat and some gelatin.

No. 2766. Sold by G. W. Jenkins. This sample contains 4 8 per cent. of butter-fat and considerable gelatin.

No. 2767. Sold by Peter Cero's Ice Cream Co. This sample contains 2.7 per cent. of butter-fat and quite a large amount of gelatin, and borax as a preservative.

None of the other samples in this lot contained preservatives.

Ice-cream from Atchison.

No. 2783. Sold by Polklen & Co. This sample contains 10.8 per cent. of butter-fat and a large quantity of gelatin.

No. 2784. Sold by F F. Dilgert. This sample contains 5.7 per cent. of butter-fat, a small quantity of starch, and a small quantity of gelatin.

No artificial preservatives were found in any of these samples.

Ice-cream from Parsons.

No. 2785. Sold by Magonder Bros. confectionery and bakery. This sample contains 6.9 per cent. of butter-fat and considerable starch and gelatin.

No. 2786. Sold by T. A. Littlefield, Queen City Creamery Co. This sample contains 10.8 per cent. of butter-fat and a considerable quantity of gelatin.

No artificial preservatives were found.

Ice-cream from Hutchinson.

No. 2795. Sold by Crispis Candy Mfg. Co. This sample contains 4.8 per cent. of butter-fat and a little gelatin.

No. 2796. Sold by the Bon Ton bakery. This sample contains 12.3 per cent. of butter-fat and a small quantity of gelatin.

Preservatives were not found in the above samples.

Ice-cream from Leavenworth.

No. 2813. Sold by Lawrence O'Kane. This sample contains 4.2 per cent. of butter-fat and some gelatin.

No. 2814. Sold by John McCool. This sample contains 3.9 per cent. of butter fat and a very small quantity of gelatin or other thickening material.

No. 2815. Sold by the Leavenworth Dairy and Creamery Co. This sample contains 6 per cent. of butter-fat and some gelatin.

No artificial preservatives were found in any of the above samples.

Ice-cream from Lawrence.

No. 2830. Sold by W. Wiedemann. This sample contains 18.4 per cent. of butter-fat and no starch or gelatin.

No. 2831. Sold by W. Wiedemann. (Chocolate ice-cream.) This sample contains 16 8 per cent. of butter-fat and no gelatin or starch.

No. 2832. Sold by the "Palace of Sweets." This sample contains 13.2 per cent. of butter-fat and some gelatin.

No. 2835. Sold by the "Sugar Bowl." This sample contains 13.2 per cent. of butter-fat and considerable gelatin.

No. 2836. Sold by Terry Ewers. This sample contains 18.3 per cent. of butter-fat, and starch as a thickening material. No gelatin was found.

No. 2899. Sold by Courtrakon. This sample contains 11.4 per cent. of butter-fat and considerable gelatin.

No. 2900. Sold by L. Zuttermeister. This sample contains 13.2 per cent. of butter-fat and some gelatin.

No. 2901. Sold by V. C. Keller. This sample contains 15 per cent. of butter-fat and no gelatin.

No. 2902. Sold by T. A. Ewing. This sample contains 13.2 per cent. of butter-fat and no gelatin.

No artificial preservatives were found in the above samples.

Ice-cream from Topeka.

No. 2823. Sold by the Heinz Ice Cream Co. This sample contains 4.5 per cent. of butter-fat, considerable starch and some gelatin as thickening material.

No. 2824. Sold by W. H. Batman. This sample contains 11.4 per cent. of butter-fat and a very small quantity of gelatin or other thickening material.

No. 2825. Sold by Scott Bros. This sample contains 6.9 per cent. of butter-fat, some gelatin or other thickening material.

No. 2826. Sold by Baughman Bros. This sample contains 10.8 per cent. of butter-fat, considerable starch, and considerable gelatin as thickening material.

No. 2827. Sold by the Topeka Pure Milk Co. (Chocolate.) This sample contains 7.2 per cent. of butter-fat, a small quantity of starch, which might have been introduced as a constituent of the chocolate used, and considerable gelatin.

No artificial preservatives were found in the above samples.

SUMMARY.

A summary of the thirty-four samples analyzed shows that borax, as a preservative, was found in only one sample. Only four of the samples contained starch. Formaldehyde as a preservative was not found in any of the samples.

The flavoring material was vanilla in all except two samples, which were flavored with chocolate.

Considering the butter-fat, we find that this varies from 18.4 per cent. down to as low as 2.7, or an average of 9.66. This is certainly a very wide range. If the standard of 12 per cent. of fat suggested above is adopted, 55 per cent., or more than one-half of the samples examined, would fall below the standard. It would seem that the manufacturer furnishing a high grade of ice-cream, which is really nutritious and contains a good per cent. of butter-fat, should be protected against the vendors who put upon the market an article of very inferior quality, containing no more butter-fat than a good quality of milk. At any rate the customer should pay less for the cheaper cream.

There are quite a number of products on the market which are used to thicken cream, so that from a very low grade of cream a product may be obtained which somewhat resembles that from a high grade of cream. These substances, while they may not be injurious, are simply thickening material, and serve to cheapen the product.

"CREMOLINE." This is one of the substances put on the market to thicken ice-cream. It is a white powder, with a slightly sweet taste, and is used in the proportion of an ounce to ten gallons of ice-cream. It consists essentially of gum tragacanth, which has the property of swelling very freely, with water. The powder leaves 1.77 per cent. of ash, which consists largely of lime.

This particular sample was obtained through a dealer, and was not a manufacturer's package.

IMPURE ICE AND WATER.

Samples of water from Ulysses, Grant county.

NOVEMBER 5, 1906.

Dr. S. J. Crumbine, Topeka: DEAR DOCTOR—The following is the analysis of the samples of water received from Ulysses, Kan. The complaint had been made that there was typhoid fever in the town and it was feared that the ice was contaminated. We were unable to obtain any of the ice, but several samples of water from the reservoir were sent.

No. 2790. Water from reservoir from which ice was taken.

Free ammonia	1.61 parts per million.
Albuminoid ammonia	2.55 " "
Nitrogen as nitrites	None.
Nitrogen as nitrates	None.
Chlorin	421.5 parts per million.
Total solids	3901.0 " "
Loss on ignition	855.0 " "

During ignition the residue turned brown and then black, and smelled like burning bones and nitrogenous matter.

The amount of organic matter, as shown by the free and albuminoid matter, is enormous. This is also shown by the ignition of the residue. The water is evidently *extremely foul*, and the ice from it would not be fit for domestic use.

No. 2793. Water from J. S. Throll's well, near Ulysses.

Free ammonia	0.75 parts per million.
Albuminoid ammonia	1 70 " "
Nitrogen as nitrites	None.
Nitrogen as nitrates	None.
Chlorin	354 5 parts per million.

The large amount of ammonia in this water shows that it is dangerous to use for domestic purposes. There is some resemblance between this water and that of the reservoir, in the ammonia and chlorin contained.

The analysis of E. M. Hawthorn's well, at the post-office, and of the water from the hotel well was also made. These waters, although containing considerable mineral matter, do not show sufficient contamination to warrant their condemnation.

Yours sincerely, E. H. S. BAILEY.

[The analysis of creamery butter has been continued by our food analyst, Professor Willard, of Manhattan, and the results of such analyses are set forth in the acompanying report. Surplus water seems to have been pretty thoroughly squeezed out by former publicity, although the net weights of cartons, which are presumed at least by the purchaser to contain one pound, continues to be very considerably less than that amount. These matters will continue to receive the attention of our analaysts, and be published in forthcoming issues of the Bulletin.—*Secretary.*]

MANHATTAN, KAN., December 4, 1906.

Dr. S. J. Crumbine, State Board of Health:

DEAR DOCTOR—We have completed the analysis of the samples of butter sent within the last few weeks, and the results are shown in the following table:

No.	BRAND AND MANUFACTURER.	Gross weight, in ounces....	Net weight, in ounces...	Per cent. moisture....	Per cent. curd...	Per cent. salt, ash........	Per cent fat ..
60	Sunflower Creamery Butter, Queen City Creamery Company, Parsons, Kan.	14.54	14.83	11.25	0.73	1.63	86.39
61	Empire Creamery Butter, J. P. Baden Produce Company, Winfield, Kan	16.82	15.06	11.08	0.89	2.97	83.09
62	Peerless Creamery Butter	16.01	14.71	14.69	0.81	4.46	80.04
63	Beechwood Creamery Butter, Beechwood Creamery Company.	16.34	14.95	14.39	0.89	3.07	81.66
64	Primrose Creamery Butter, Continental Creamery Company, Topeka, Kan.	16.62	15.12	16.50	0.82	3.14	79.54
65	Meadow Gold Creamery Butter, Continental Creamery Company, Topeka, Kan.	16.70	15.25	13.34	0.40	2.78	83.54
66	Meadow Gold Creamery Butter, Continental Creamery Company, Topeka, Kan.	16.38	14.83	12.59	0.99	2.10	84.32

No. 62 did not bear the name of the manufacturer, but the seller stated that it was sold by the Continental Creamery Company. In reference to No. 63, the label of which gave the Beechwood Creamery Company as manufacturer, the seller stated that it was sold by the Continental Creamery Company. Of the two samples of Meadow Gold, No. 65 was purchased in Kansas City and No. 66 in Manhattan. Each sample was weighed as soon as it reached the laboratory. It will be noted that in every case the net weight is below sixteen ounces, and in four cases is below fifteen ounces. The percentage of moisture exceeds the legal limit (15.99) in only one instance, No. 64. This number naturally shows a low per cent. of fat also. Nos. 62 and 63 should be regarded as somewhat deficient in butter-fat. In no case was boric acid or borax detected, or any indication of renovation or of oleomargarin observed.

Respectfully submitted. J. T. WILLARD.

DRUG ANALYSES, No. II.

The result of analyses by the bureau of investigation and publicity, under the supervision of Professor Sayre, of the school of pharmacy, is herewith submitted, and the attention of physicians called to the opening remarks made by Professor Sayre on the standards of drugs. These suggestions are particularly pertinent to the subject under discussion, and offer a field for much research and investigation as well as for united effort towards the standardization of all medicinal agents. Surely the time must come when dispensing physicians must know more about the quality and alkaloidal strength of drugs dispensed, in order to have any certainty of the expected result:

LAWRENCE, December 15, 1906.

Dr. S. J. Crumbine, Secretary State Board of Health, Topeka:

DEAR SIR—I have the honor of presenting to your Board a second report on the examination of medicinal substances obtained on the open market from different parts of the state by members of your Board and forwarded to me for examination, this being done in accord with the law regulating the adulteration of foods and medicines. Before making a statement of the analyses, it is my desire to present to your honorable body some facts which have developed in connection with the law since the passage in Washington of the pure-food-and-drug law.

In the first place the pharmacopœia, as a standard, in some cases, has been found to be somewhat rigid. Manufacturers of chemicals and remedial agents have pointed out some minor errors relating to the melting-point, boiling-point, etc., which are to be revised, and in addition to this there are some tests which are deemed needlessly rigid. As an illustration of this point, permit me to make a statement with regard to the well-known vegetable principle aloin. Our experience has been, in accord with that of other investigators, that the test of the pharmacopœia, which requires that the official aloin should leave practically no ash when incinerated. We find that the standard grades of commercial aloin, on incineration, leave ash in amounts ranging from 0.11 to 0.40 per cent. We should consider that in our examination of aloin sent us there is but one that is below what might be considered as medicinally pure.

In case of belladonna root, it would seem from the statement of high authorities in the commercial world that the percentage of mydriatic alkaloidal requirements of the pharmacopœia may be rather high. Farr and Wright report the assay of fourteen samples of belladonna root which gave an average of but 0.44 per cent.[1] They recommend that a minimum standard of 0.4 per cent. be allowed for the rest. J. M. Francis states that from records taken in regular sequence of belladonna purchased during 1904 and 1905, amounting to 11,330 pounds, he obtained an average of but 0.48 per cent. of mydriatic alkaloids.[2]

It would seem, therefore, that the requirement of the pharmacopœia, of 0.5 per cent. of alkaloids from belladonna root, is rather high. However, these questions relating to the standards for medicinal substances are being very seriously considered by the revision committee, and we are promised an early supplement which will revise such standards where it seems necessary. It may be stated in this connection that there is a prevailing opinion among physicians and the public that the pharmacopœia and the National Formulary give tests for the standardizing of all preparations that are recognized in these two standards, but such is not the case. Mr. L. D. Havenhill, of the department of pharmacy, has summarized the standards of the pharmacopœia, as follows: "The chemical substances of the pharmacopœia number about 300, and practically all of them are required to conform to certain prescribed chemical and physical requirements. The crude products derived from the vegetable and animal kingdoms, numbering about 240, are all quite accurately described, and about fifty of them have, in addition, a chemical method of valuation. The preparations or medicines compounded from the two classes above mentioned comprise about 413 formulas. Here we have about forty preparations for which there are volumetric assays, 17 preparations for which there are gravimetric assays, 1 preparation gasometric assay, 18 preparations for which there are qualitative tests for purity only. This leaves 337 preparations in the pharmacopœia, or more than eighty per cent., without any official description, definition, or standard."

The federal pure-food-and-drug law, which goes into effect January 1, 1907, states that drugs, and these are defined in the broadest sense of the term, so as to include "all medicines and preparations recognized in the United States Pharmacopœia or National Formulary for internal or external use, and any substance or mixture of substances intended to be used for the cure, mitigation or prevention of disease of either man or other animal"—these drugs "shall be deemed adulterated if, sold under or by a name

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1. Jour. Am. Chem. Soc., vol. 28, No. 12, p. 608.
2. Commentary on Eighth Revision of Pharmacopœia, by J. M. Francis, p. 23.

recognized in the United States Pharmacopœia or National Formulary, they differ from the standard of strength, purity or quality as determined by the test laid down in the United States Pharmacopœia or National Formulary official at the time of investigation." Provision is made whereby these drugs may not be considered adulterated, provided they are properly labeled with reference to their quality. The National Formulary referred to is purely a book of formulas, without any so-called tests, either chemical or physical. These formulas, 570 in number, are then added to those of the pharmacopœia, making a total of 983 formulas. When we add 337 preparations of the pharmacopœia, not provided with tests, with that of the 570 of the National Formulary, we have a total of 907 preparations. This number shows that there are ninety-two per cent. of the preparations practically unstandardized, the only standard being that of the formula itself. The question occurs, How shall we assay these unstandardized preparations?

Methods are known to the expert pharmacist for the assay of a large number of these unstandardized drugs and preparations, but what shall the Board of Health or its agents agree upon as to methods of such standardization? It seems to us that one of the first duties of the chemist who shall have this work in charge is to spend much time upon this problem, and it is needless to say that here is a field for a vast amount of research. In the pharmaceutical laboratory of the University this class of work has already begun, and we shall report results to the Board of Health from time to time. The analyses of the liquid preparations of the pharmacopœia and the National Formulary, Mr. Havenhill states, is by far the most difficult of all the classes of preparations. It is here that the analyst who is not a trained pharmacist needs to display the greatest caution, for surely the man without experience in putting these different drugs together is a poor judge of how to take them apart in a way to show whether their official formulas have been properly compounded or not.

Since the last report there have come to the laboratory for analysis several lots of drugs and official preparations. These have been sent mostly by members of the State Board of Health; not over half a dozen have come from other sources. The number of packages received is 106 in all. These represent a great variety of remedial agents. We are now prepared to report upon the analyses of these preparations as far as the work has at present progressed. We desire to state in passing, in order to make this work prompt and efficient, it will be absolutely necessary to add to the force now engaged in the work. It will be impossible to meet the demands unless two helpers are added to the present force. These need not necessarily be expensive men, as they will be under the direct supervision of trained analysts.

The present report includes the analytical work done by Mr. L. D. Havenhill, Mr. H. W. Emerson, and myself, and will be condensed as much as possible, by giving in some cases simply results. The source of the supply of material examined is placed in the hands of the State Board of Health, for them to dispose of as they deem best. Most of the packages received were broken, a few, especially packages of one lot, were not labeled in such a way as to trace the dispenser or the manufacturer. These are properly indicated in the accompanying report.

Lime-water.—The United States Pharmacopœia requires that lime-water should contain 0.14 per cent. of $Ca(OH)_2$.

No. 1394. Labeled "Lime-water from Merrill's tablets." Deficient in strength. This sample contained 0.0537 per cent. $Ca(OH)_2$.

No. 1425. Lime-water. Deficient in strength. Contained 0.1125 per cent. $Ca(OH)_2$.

No. 1455. Lime-water. Official strength. Contained 0.145 per cent. of $Ca(OH)_2$.

No. 1383. Pancreatin. Official strength.

No. 1414. Pancreatin. Official strength.

No. 1459. Pancreatin. Official strength.

No. 1460. Pancreatin. Deficient in strength. This deficiency was due, doubtless, to the fact that the article was carelessly dispensed. It came to us in a paper sack, and was in a solid cake, due to the absorption of the moisture. We are inclined to think that the deterioration occurred after dispensing.

No. 1382. Pepsin. Official strength.

No. 1421. Pepsin. Official strength.

No. 1451. Pepsin. Official strength.

No. 1461. Pepsin. Carelessly dispensed, in a paper sack and caked, but of official strength.

Hydrastis, Powdered.—The pharmacopœia requires that this shall contain 2.5 per cent. of hydrastin.

No. 1450. Hydrastis. Yielded by the official assay process 1.58 per cent.

No. 1411. Hydrastis. 1.69 per cent. of alkaloid.

No. 1466. Hydrastis. 1.89 per cent. of alkaloid.

No. 1386. Hydrastis. 1.73 per cent. of alkaloid.

Fluid Extract of Hydrastis.—The pharmacopœia requires that this drug shall assay, in each 100 c. c. of fluid extract, 2 gm. of hydrastin.

No. 1454. Fluid extract of hydrastis. This preparation yielded 1.46 per cent.

No. 1416. Fluid extract of hydrastis. 1.35 per cent of hydrastin.

No. 1474. Fluid extract of hydrastis. 2.10 per cent. of hydrastin.

No. 1402. Fluid extract of hydrastis. 1.73 per cent. of hydrastin.

Fluid Extract of Belladonna (Root).—The official standard for this preparation requires that it shall contain, in each 100 c.c., 0.5 gm. of alkaloids from belladonna root.

No. 1470. Fluid extract of belladonna.—This preparation was a fluid extract of the leaves, whereas the official fluid extract of belladonna is made from the root. We assayed this for belladonna alkaloid, however, and found it contained, in 100 c.c., 0.323 per cent. of same.

No. 1452. Fluid extract of belladonna.—Made from the leaves; therefore not official.

No. 1415. Fluid extract of belladonna.—Made from leaves; not official.

Two of the above fluid extracts of belladonna were labeled "Fluid Extract of Belladonna Leaves," and were evidently intended for the purpose of making the tincture by dilution. The other fluid extract of leaves was labeled simply "Fluid Extract of Belladonna." We suggest that manufacturers, in sending out fluid extracts of belladonna leaves (intended mainly for dilution in making tincture, perhaps), should plainly state upon their face labels that this preparation is unofficial, calling attention to the fact that this should not be dispensed for the fluid extract of belladonna, thus avoiding the mistakes that are evidently liable to be made.

No. 1481. Fluid extract of belladonna.—This preparation contained 0.416 gm. of alkaloid in 100 c.c. of the preparation.

No. 1433. Fluid extract of belladonna. Contained 0.358 gm. of alkaloid in 100 c.c.

No. 1379. Fluid extract of belladonna. Contained 0.485 gm. of alkaloid in 100 c.c.

Tannic Acid.—The United States Pharmacopœia requires that tannic acid should contain not more than 0.20 per cent. of ash, and be completely soluble in five parts of hot water.

No. 1381. Tannic acid. Contained 0.32 per cent. ash; not completely soluble in five parts of hot water; resinous matter present.

No. 1405. Tannic acid. Contained 0.58 per cent. ash; not completely soluble in five parts of hot water; considerable resinous matter present.

No. 1445. Tannic acid. Contained 0.565 per cent. ash; resinous matter present.

Aloin.—The United States Pharmacopœia admits of no ash. (See comments above.)

No. 1389. Aloin. Rather dark colored. Ash, 1.03 per cent.

No. 1404. A Aloin. Light yellow color. Ash, 0.38 per cent.

No. 1404. B Aloin. Light yellow color. Ash, 0.31 per cent.

[The market does not afford better samples than the two last.]

No. 1438. A Aloin. Contains 0.364 per cent. ash.

No. 1438. B Aloin. Contains 0.37 per cent. ash.

Commercial Creosote.—The United States Pharmacopœia does not define commercial creosote.

No. 1427. Commercial creosote. Not U. S. P., and therefore no reason to suppose that it was other than it claimed to be.

Chloral Hydrate.

No. 1400. Chloral hydrate. Considered from examination U. S. P., except in melting-point. Melting-point, 51.5°.

No. 1413. Chloral hydrate. Considered from examination U. S. P., except in melting-point. Melting-point, 51°.

No. 1440. Chloral hydrate. Not dry; chlorids present. (Not up to official requirements.) Melting-point, 52°.

No. 1473. Chloral hydrate. Melting-point, 51°.

Oil of Peppermint.—United States Pharmacopœia requires specific gravity of 0.894 to 0.914, and angle of rotation,—25° to —33°.

No. 1384. Oil of peppermint. Specific gravity, 0.901; angle of rotation, —25°.

No. 1418. Oil of peppermint. Specific gravity, 0.895; angle of rotation,—22.5°.

Chlorinated Lime.—United States Pharmacopœia requires not less than 30 per cent. of chlorin.

No. 1399. Chlorinated lime. Available chlorin, 0.13 per cent.

No. 1406. Chlorinated lime. Available chlorin, 29 per cent.

No. 1482. Chlorinated lime. Available chlorin, 37.5 per cent.

Resin of Podophyllum.—The United States Pharmacopœia admits of 0.7 per cent. ash.

No. 1385. Resin of podophyllum. Contains 1.00 per cent. ash.

No. 1417. Resin of podophyllum. Contains 0.94 per cent. ash.

No. 1443. Resin of podophyllum. Contains 1.08 per cent. ash.

Borax.—United States Pharmacopœia requires about 47 per cent. water of crystallization.

No. 1388. Borax. Badly effloresced; 29.7 per cent. water of crystallization present; of proper strength; trace of heavy metals.

No. 1410. Borax. Badly effloresced; 37.6 per cent. water of crystallization present; trace of heavy metals.

[Aside from having been kept in unsuitable containers, they were considered good quality.]

Menthol.

No. 1386. Menthol. Considered on examination U. S. P. Melting-point, 43°.

No. 1422. Menthol. Considered on examination U. S. P. Melting-point, 42.7°.

No. 1422. Menthol. Leaves a slight residue, 0.0575 per cent. Melting-point, 43.7°.

No. 1475. Menthol. Melting-point, 42°.

Potassium Carbonate.—United States Pharmacopæia requires that it should be in well-stoppered bottles, and should contain, when dry, 98 per cent. of pure salt.

No. 1391. Potassium carbonate. 16.45 per cent. moisture; did not yield a perfectly clear solution in water; after drying, yields 99 per cent. anhydrous potassium carbonate.

No. 1419. Potassium carbonate. 16.2 per cent. moisture; yielded a perfectly clear solution in water; after drying, yielded 99.7 per cent. anhydrous potassium carbonate.

[Both samples considered of good quality.]

No. 1448. Potassium carbonate. Dispensed in paper; 18.7 per cent. moisture; when dried, 99 per cent.

No. 1385. Sodium carbonate. Badly effloresced sample of crystallized sodium carbonate; contained 35.7 per cent. moisture and combined water; not United States Pharmacopæia.

No. 1409. Sodium carbonate. Monohydrated sodium carbonate; 14.85 per cent. moisture: 99.6 per cent. monohydrated sodium carbonate; considered United States Pharmacopæia.

Calcium Hypophosphite.

No. 1390. Calcium hypophosphite. Considered U. S. P.; met U. S. P. requirements.

No. 1407-A. Calcium hypophosphite. Considered U. S. P.; met U. S. P. requirements.

No. 1407-B. Calcium hypophosphite. Considered U. S. P.; met U. S. P. requirements.

[Trace of heavy metals commonly the case.]

Creosote.

No. 1392. Creosote from coal tar. Not recognized by U. S. P.

No. 1395. Creosote from wood. Not U. S. P. in quality.

No. 1437. Beechwood creosote. Specific gravity 1.075. No impurities found.

Glycerin.

No. 1399. Glycerin. Slight trace of sulfates.

No. 1420. Gylycerin. Pure.

No. 1441. Glycerin. Trace of heavy metals and mineral impurities. Sugar, a trace; chlorids, a trace; butyric acid, a trace.

Quinin Sulfate.—The pharmacopœial test for cinchona alkaloids in quinin is somewhat elaborate. It is based upon the solubility of the alkaloid (after it is precipitated from the sulfate) in water, rendered alkaline by means of ammonia at 15° C. (59° F.) A clear solution indicates the absence of very excessive amounts of other cinchona alkaloids.

No. 1401. Quinin sulfate. Above test shows slight excess of other cinchona alkaloid.

No. 1408. Quinin sulfate. Slight excess of other cinchona alkaloids.

No. 1453. Quinin sulfate. Slight excess of other cinchona alkaloids.

No. 1476. Quinine sulfate. Slight excess of other cinchona alkaloids.

Fowler's Solution.—The pharmacopœia requires that this contain potassium arsenite, corresponding to one per cent. of arsenic trioxid.

No. 1457. Fowler's solution. Contains 0.94 per cent.

No. 1426. Fowler's solution. Contains 1 per cent.

No. 1380. Fowler's solution. Contains 0.98 per cent.

Aromatic Spirits of Ammonia.—The pharmacopœia requires that this shall have the specific gravity of 0.900.

No. 1393. Aromatic spirits of ammonia. Official strength.

No. 1458. Aromatic spirits of ammonia. Official strength.

No. 1423. Aromatic spirits of ammonia. Official strength.

Powdered Asafetida.—No. 1484. This drug should, if it be a prime quality, not contain over 10 per cent. of ash, and should be soluble to the extent of 60 per cent. in alcohol. This sample contained 43.18 per cent. of ash, and was soluble to the extent of about 35 per cent. The residue after treatment with alcohol effervesced with acids showed the presence of calcium carbonate and revealed an abundance of starch under the microscope.

Powdered Cubebs.—No. 1485. The sample gave an ash amounting to 10.1 per cent., indicating probably a mixture of inert stems or other inert matter. Fine cubebs should not give over 5 per cent. of ash.

Tincture of Cactus grandiflorus.—No. 1486. Tinctures of this drug made by us and that under examination correspond in the quantity and quality of residue. There is no standard for the preparation.

Respectfully submitted. L. E. SAYRE.

No buried nations sleep in the untainted soil of Kansas, vexing the present with their phantoms, retarding progress with the burden of their outworn creeds. Unencumbered by precedents, we stand in the vestibule of a future which is destined to disclose upon this arena time's noblest offspring—the perfected flower of American manhood.—*John J. Ingalls.*

I hate the fellow that sits around
And knocks the livelong day—
Who tells of the work he might have done,
If things had come his way;
But I love the fellow who pushes ahead
And smiles at his work or play;
You can wager when things do come around
They will come his way—and stay.
—*Exchange.*

Ring out the old—ring in the new,
Ring, happy bells, across the snow.
The year is going—let him go,
Ring out the false, ring in the true.
—*Tennyson.*

SECRETARY'S REPORT.

Quarterly Meeting, December 20, 1906.

Mr. President and Members of the Board:

The year of 1906, now about drawing to a close, will go into history as marking the year of the most aggressive and progressive work that the State Board of Health has thus far accomplished. It is impossible to remain stationary in this age of activity and progress, and they who can be content to drift in the affairs of human effort have no place in the public confidence nor in the world's movement towards the Utopian idea of perfection. It has been our set purpose to endeavor to keep abreast of the progress in sanitary science and preventive medicine, and to have a small part at least in the general reform movement toward bettering the condition of our fellow men in such places and things as the work of this Board naturally brings us in contact with them. To what extent our hopes have been realized and in what respect the sanitary conditions of the state have been improved must be left to the judgment of others.

I herewith submit a brief review of the work of the Board during the past year, omitting, of course, the numerous minor details of daily reoccurrence which take up much of the time and energy of this office. One of the most important factors in the accomplishment of our purpose has been through the medium of the official organ of the Board, the *Bulletin*. When I assumed the duties of secretary two years ago I was deeply impressed with the necessity of some means of monthly communication with the sanitary officials of the state, and through which to give out such information to the citizens of our commonwealth as might be found necessary in safeguarding their health and personal interests. Hitherto the only means of official communication this Board had was its biennial report, which was of little value except from a statistical standpoint to the few who delve in sanitary science. Through the kindness of Mr. McNeal, the state printer, we were able to arrange for the publication of a monthly bulletin, the first number of which was issued in July, 1905. The modest sheet of eight pages that made its first appearance on that occasion has steadily grown in both size and favor, until we have found it necessary to have thirty-two pages in order to cover the month's work and needs.

Through this medium publicity has been given to the analyses of food and drug products so ably conducted by our analysts at the State University and Agricultural College. Through this medium the Board's orders and decisions, the discussion of sanitary problems and useful information have been disseminated in a way which could not have been possible otherwise. From our first edition of 500 copies we now have published monthly 1600, with the mailing-list growing daily. In my judgment, provision should be made for getting out an edition of 5000 copies, and the name of every physician, school-teacher, library, and county, city and state official be added to the mailing-list.

In the January issue, 1906, was published the first food analyses, which received the widest publicity in the daily press, and was the first Herculean stroke in the enforcement of our pure-food law. The publication of drug and food analyses has continued up until the present time, with the result, I am confident, of restricting and preventing much adulteration that had hitherto been practiced by manufacturers, not only in this state, but in adjoining states, whose products are sold in Kansas. As publicity is the greatest moral disinfectant thus far discovered, it will be our purpose and aim to continue the publication of such analyses from time to time.

PURE FOOD AND DRUGS.

The law prohibiting the sale and manufacture of adulterated foods and drugs in this state makes no provision nor charges any one specifically with its enforcement; hence it has been a dead letter on the statute-books for many years. After the passage of the law by the legislature of 1905 designating the chemical departments of the University and Agricultural College as places where foods and drugs might be analyzed, and charging the State Board of Health with the publication of such analyses, it seems that it was clearly the intention of the legislature that this Board have general jurisdiction in such matters. At all events, one year ago this last September the first samples of food were purchased on the open market, notwithstanding the absence of any appropriation for such a purpose, and were sent to the University for analysis. With this opening wedge, and the publication of the result of such analyses, the work has grown until it now forms a very large share of the daily routine of this office, in correspondence and personal conferences with those interested.

While much has been accomplished, much still remains to be done in this important work. The insight to ways, means and methods of unscrupulous manufacturers and dealers thus gained during the past year, and the passage of the national pure-food law, which in effect checks up to each state the cleaning of its own dooryard, convinces me of the urgent and absolute necessity of the passage of a pure-food bill by our present legislature, preferably along the lines of our national law, which will also make provision for food inspection; for it cannot be doubted that the best law that might be placed upon the statute-books will be of but little value if inspection of the products on the shelves of the grocer is not systematically and regularly carried out. In accordance therewith a bill has been framed, which has been submitted to our food and drug analysts, the attorney of the Board and the attorney-general for their approval, and which I trust will meet the hearty approval of this Board and their united influence in securing its passage.

UNITED STATES GEOLOGICAL SURVEY.

Two years ago an effort was made to have legislation enacted to give this Board the sanitary control of the waters of Kansas, including the inspection of plans and specifications for the erection and construction of public water-works and sewer systems. This bill met with defeat, and the continuance of the crime of polluting the streams, lakes and natural reservoirs from which our citizens derive their source of water-supply is unabated.

It seems impossible to obtain anything like an accurate report of the number of typhoid-fever cases occurring in the year 1905. The deaths reported from typhoid fever number 397, which makes a death rate per 100,000 population of 28.9. The number of cases and deaths reported thus far this year show an increase in this malignant disease, and, indeed, a review of the data for the past ten years shows a gradual ascending scale in the mortality from typhoid fever.

It was in consideration of the above facts, together with the constant appeal to this Board by municipalities and citizens to prevent the pollution of their water-supplies and abate nuisances contributing towards their contamination, that was the occasion for appealing to the federal government to help us in determining the sources of the healthful water-supply, the causes and sources of pollution, the collection of industrial waste into profitable by-products, and the determination of the economic and industrial usefulness of the streams of the state.

Correspondence with the department at Washington has finally resulted in a provisional agreement which the secretary has signed in behalf of the Board, and which has been signed by H. C. Rizer, acting director, in behalf of the United States Geological Survey, and under this agreement the work has actually begun, under the immediate supervision of Mr. Horatio N. Parker, assistant hydrographer. This agreement has been signed since the last Board meeting, and I trust will meet with the Board's approval. This work also contemplates the sanitary survey of every city and village in the state, which information will be kept on file in this office under the card-index system, and afford valuable data for the interpretation of local epidemics and suggest the means for their suppression. The collection of this information, which will be of inestimable value along the lines above indicated, will be of little use so far as the sanitary work of this Board is concerned until such time as the legislature sees fit to give its approval to laws by means of which the continued pollution of the natural waters may be prevented or modified, and expert account be taken and permission required of the Board for the installation of public water-works and sewer systems. Mr. Parker, who has had a wide experience as an expert in many states, has kindly consented to express his views in this important matter in a bill to be presented to the legislature at its session this winter.

STATE LABORATORY.

The legislature of 1905 made provision for the appointment of a bacteriologist for the Board, at a salary of $900 a year. They failed however to make any appropriation or provision for the establishment or maintenance of a laboratory, the purchase of the necessary supplies, for mailing specimens, postage, and other incidental expenses. Notwithstanding the absence of an appropriation for this work, we have endeavored to meet the situation by the use of our sanitary fund, and thus the state laboratory has been established, under the supervision of Dr. S. E. Greenfield. There can be no doubt that much good has been accomplished through the medium of the state laboratory in the early diagnosis of tuberculosis and diphtheria, which examinations are now made free of charge for all physicians in the state. County repositories have been established in each county, where mailing-tubes can be had for sending in specimens. This expense has drawn heavily on our sanitary fund, which is supposed to be used for other purposes. The legislature should make sufficient appropriation to enlarge our laboratory and provide for its maintenance.

On December 13 the following letter was received from Chancellor Strong, of the State University:

Dr. S. J. Crumbine, Secretary State Board of Health:

DEAR SIR—After conference with the board of regents of this University, I am writing you officially to offer to the State Board of Health the use of our laboratories to conduct the expert scientific work that may be necessary in connection with the Board of Health. The laboratories at the University are the most extensive, by far, in the state, and with very little increase of expense the scientific work which would naturally fall to the Board of Health may be done here by experts whose service would otherwise occasion the state large expense. It is the desire of the board of regents of this University to make the institution as useful to the general life of the state as possible. I, of course, understand that it will be necessary to do the immediately urgent work at Topeka. We stand ready, however, to assist in the conduct of such work for the State Board of Health as cannot be done at Topeka with the present equipment. Will you please call the attention of the State Board of Health to this communication. I shall be glad to confer with them more particularly in regard to the matter if they desire it. With best wishes, I am, Very truly yours,

FRANK STRONG, *Chancellor.*

The generous offer of the chancellor will be thankfully received by the profession throughout the state, and will provide means whereby any kind of scientific work can be done without cost to any citizen. While this Board should gladly and thankfully accept the offer extended, it seems to me that the laboratory, as already established, should be continued in the city of Topeka, to cover the immediate necessities of the Board and the local examinations naturally coming to this office. Pathological specimens, bacteriological tests for contaminated water and such other work requiring more time and extensive apparatus could be and should be referred to the University hereafter. Just how the situation might be covered and framed in a suitable bill I have not yet thought out, and I trust the Board will make some suggestions at this meeting towards a satisfactory solution of the state laboratory. Doctor Greenfield will submit to the Board her report of the work done during the year.

TUBERCULOSIS CAMPAIGN.

Since coming in touch with the work of the Board as its secretary, I have become more deeply impressed, if possible, than heretofore by the terrible ravages in sickness and death by the "great white plague." When one notes the continually increasing number of deaths from this dread disease, whose victims are selected from those in the very prime of life, one is appalled at the devastation, suffering and economic loss on every hand. This condition is all the more distressing when it is now quite generally conceded to be a preventable disease. If it is, indeed, a disease to be prevented, the duty of this Board is clearly indicated, in that they should leave no stone unturned or resource untried that might contribute in any measure or in any degree whatever towards its suppression or prevention. When one sees a whole family wiped out of existence in the brief space of two years, and communities infected and their population menaced with this pestilential malady, it must call forth our best efforts in measures of prevention and excite our deepest sympathy in the havoc wrought in our beloved commonwealth. This conviction gave birth to the plan of a tuberculosis census, in which it was hoped that the necessary information might be collected indicating the name and address of every tuberculous case in the state, whereby preventive measures could be applied. The history of this inauguration has been indicated in the last quarterly report, and it would be appropriate at this time to give you a summary of the information thus collected.

The number of cases reported to this office by physicians through a direct appeal sent out to them is 427, which are tabulated by counties as follows:

Allen	9	Franklin	11	Osage	4
Anderson	7	Graham	2	Osborne	2
Atchison	8	Gray	2	Ottawa	3
Barber	2	Greenwood	4	Pawnee	3
Barton	5	Harvey	3	Phillips	10
Bourbon	7	Jackson	5	Pottawatomie	2
Brown	12	Jefferson	8	Pratt	1
Butler	4	Jewell	6	Republic	7
Chase	2	Johnson	8	Reno	5
Chautauqua	4	Kingman	1	Rice	12
Cherokee	3	Kiowa	1	Riley	1
Cheyenne	1	Labette	19	Rooks	2
Clay	6	Leavenworth	8	Rush	3
Cloud	1	Lincoln	1	Saline	6
Coffey	6	Linn	1	Sedgwick	6
Cowley	10	Logan	2	Shawnee	8
Crawford	7	Lyon	16	Smith	2
Decatur	1	Marion	2	Stafford	1
Dickinson	7	Marshall	9	Sumner	24
Doniphan	1	McPherson	5	Thomas	1
Douglas	2	Miami	1	Wabaunsee	5
Edwards	1	Montgomery	8	Washington	1
Elk	2	Morris	4	Wilson	5
Ellis	2	Morton	1	Woodson	4
Ellsworth	4	Nemaha	7	Wyandotte	35
Finney	1	Neosho	7		—
Ford	10	Ness	3	Total	427

From the reports of cases through county health officers and the number of deaths for the year ending November 30, 1906, it would seem that there has been not more than one-third of the cases reported by physicians. This is greatly to be regretted, as it was hoped that physicians would readily lend their influence in the accomplishment of the purpose designed in such means of prevention as had been suggested in the circular letter mailed to them. The lack of interest in this respect is most notable in the large cities, particularly Wichita and Topeka; physicians having a large practice, and, no doubt, a number of cases, refusing or neglecting to make this report, notwithstanding a stamped envelope was sent for reply. The counties in which no cases were reported are as follows: Clark, Comanche, Geary, Gove, Grant, Greeley, Hamilton, Harper, Haskell, Hodgeman, Kearny, Lane, Meade, Mitchell, Norton, Rawlins, Russell, Scott, Seward, Sheridan, Sherman, Stanton, Stevens, Trego, Wallace, and Wichita. Most of these counties are in the western part of the state, and in all probability there are no cases there to report.

Our pamphlet on prevention has been mailed to each case, or to the physician reporting the case, thus far received. In addition to this, pamphlets have been sent to the county health officers, with a list of names of deaths for the past year from tuberculosis, requesting that a copy of "Prevention of Tuberculosis" be placed in each family where such a death had occurred, with additional instructions to thoroughly cleanse and fumigate the house, if such had not previously been done, and to make an examination of the family, in order to discover incipient cases, if any existed. From the reports received, I have confidence to believe that this order was quite generally observed throughout the state, and infected places and things thoroughly cleaned and disinfected, removing to that extent at least dangers from inoculation of the well.

The work of this campaign has been further broadened in an educational way by providing the State Normal School, the University and many of the high schools throughout the state with these pamphlets, to be used as text-books in the physiology classes. The information thus gained among the pupils of the age susceptible to the disease will not only act as a caution and warning to them, but be the means of broadcasting information among the members of their families and friends. This training seems to be particularly necessary for those who are engaged in the occupation of teaching, for the protection of the young lives of their pupils is, in a measure, entrusted to their care during many hours of the school year. It is our purpose to provide every high school and every school-teacher within the state a copy of this pamphlet on prevention as soon as the edition can be printed for distribution. It is confidently hoped that this propaganda of education will bring favorable results in the coming years.

A summary of the reports of county health officers for the year ending November 30, 1906, shows 1132 cases reported, with 641 deaths from tuberculosis. Just how accurate these statistics are we are unable to say, but my personal judgment is that they are approximately accurate. No doubt they include, however, the imported cases—those who come from other states to the more genial and equitable climate of our fair state. This, then, is briefly a summary of the work thus far accomplished in the Board's tuberculosis crusade, which will be continued as diligently and efficiently as we have the strength and means. These statistics, gathered through the channels above indicated, and the wide-spread diffusion of the disease throught the state, with its attendant sickness, suffering, and death, together with the enormous economic loss, suggest that the state has a duty to perform in another direction aside from its work through this Board, namely, the erection of a state sanatorium for the care of the state's tuberculous poor. There is scarcely a state east of the Missouri river, together with many west of the same, that has not already erected or is in the course of constructing suitable sanatoria for this purpose.

The history of these institutions and the result obtained by them in the care of incipient cases and the dissemination of preventive measures among the people have amply justified the expense thus far involved in their erection and maintenance. Indeed, in these older states they are asking for additional institutions, that the splendid work inaugurated may be enlarged to something approximating the necessity of the momentous work before them. Germany has something like 200 sanatoria for the treatment and care of tuberculosis; almost every state or province has such an institution, and the reports issued by the Imperial Board of Health give great encouragement for the cure of this disease and its prevention among the well. Your committee appointed to formulate a bill to present to the legislature for the erection of such an institution in this state will make its report no doubt at this meeting, and such bill should receive our hearty support and influence towards its enactment into statutory law.

The various state hospitals for the care of our unfortunate insane and epileptics, as well as the State Penitentiary and reformatories, should also be provided with isolated quarters for the care of the tuberculous cases. It is nothing short of a crime to permit such cases to remain unsegregated from the well while they are unable to care for themselves or to use such necessary preventive measures as to protect those who might come in personal contact with them, and it is earnestly hoped that the legislature will make the necessary provision for such cases.

The following letter has been received recently from the secretary of the National Association for the Study and Prevention of Tuberculosis:

> **DEAR SIR: I herewith enclose draft of the amendment to the by-laws of the National Association for the Study and Prevention of Tuberculosis providing for the establishment of the advisory council. The committee of arrangements extends a cordial invitation to your Board to send a representative to the meeting of the council, under the provision made in the by-laws. The next meeting of the advisory council will be held at the time of the annual meeting of the national association, in Washington, D. C., on May 6. Questions of general interest and importance in the anti-tuberculosis work will be presented for discussion, the definite program to be decided after consultation among the organizations signifying their intention to be represented at the meeting. Trusting that you will be willing to coöperate, I am, Yours very truly, LIVINGSTON FARRAND.**

This Board should have a representative at these meetings, as much valuable information concerning methods and means put into operation by other boards and experts could be gained, and the work of our campaign correspondingly enhanced. This meeting also comes usually one or two days before the annual meeting called by the surgeon-general of the Marine Hospital Service, in accordance with an act of Congress, which the executive officers of the state boards of health are expected to attend. Thus far the Kansas State Board of Health has never been permitted to attend any meeting outside of its own jurisdiction, by reason of lack of funds for that purpose. This should not be the case. It is by reason of these national gatherings, the coming in personal contact with the great workers in sanitation and prevention, in discussing ways and means, that steel sharpens steel, and progress in sanitary science is made. The state of Kansas can no longer afford to lag in this matter, as it is anything but economy to continue such a practice. Ample means should be provided for a representative of this Board to attend the national gatherings of this character, that we may not only help in the forward movement of humanity, but in turn be helped. To that end we mean to ask for a contingent fund out of which may be paid the expenses incident to the attendance of these meetings, and it is recommended that the Board elect a delegate to represent it at the next meeting of the National Association for the Study and Prevention of Tuberculosis, to be held in Washington.

In this connection, it might be added also that considerable correspondence has been had with the view of bringing to this state, or creating for ourselves, a tuberculosis exhibit. Thus far no definite plans have been formed, as we were without the necessary means for their accomplishment. The exhibit of the national association has been spoken for almost a year in advance by other states and cities, and we therefore cannot expect to get a date for such an exhibition very soon. This correspondence has developed the fact, however, that a reasonable exhibit might be made for from $600 to $1000, which could be owned by the state and sent from city to city, including even the smaller villages and communities, with but little additional expense. A member of the Board or the secretary might have temporary charge at certain points, and the local profession be asked to give lectures in a week's program, which is generally held during the exhibition at each place. I will probably have more to report on this matter at a later date.

(Continued in January Bulletin.)

Food-inspection Decisions,

United States Department of Agriculture.

The following decisions have been made by the Bureau of Chemistry, United States Department of Agriculture, concerning flavoring extracts and substances used in the preparation of foods:

(F. I. D. 47.)

FLAVORING EXTRACTS.

The percentage of alcohol is not required to be stated in the case of extracts sold for the preparation of foods only. It is held, however, that extracts which are sold or used for any medicinal purpose whatever should have the percentage of alcohol stated on the label.

Numerous inquiries are received regarding the proper designation of products made in imitation of flavoring extracts or in imitation of flavors. Such products include "imitation vanilla flavor," which is made from such products as tonka extract, coumarin, and vanillin, with or without vanilla extract. They may also include numerous preparations made from synthetic fruit ethers intended to imitate strawberry, banana, pineapple, etc. Such products should not be so designated as to convey the impression that they have any relation to the flavor prepared from the fruit. Even when it is not practicable to prepare the flavor directly from the fruit, "imitation" is a better term than "artificial."

These imitation products should not be designated by terms which indicate in any way by similarity of name that they are prepared from a natural fruit or from a standard flavor. The term "venallos," for instance, would not be a descriptive name for a preparation intended to imitate vanilla extract. Such extracts should either be designated by their true names, such as "vanilla and vanillin flavor," "vanillin and coumarin flavor," or by such terms as "imitation vanilla flavor" or "vanilla substitute."

Articles in the preparation of which substitutes are employed should not be labeled as if they were prepared from standard flavors or from the fruits themselves. For instance, ice-cream flavored with imitation strawberry flavor should not be designated as "strawberry ice-cream." If sold as strawberry ice-cream without a label the product would appear to be in violation of regulation 22.

Artificial colors should be declared whenever present.

JAMES WILSON, *Secretary of Agriculture.*

WASHINGTON, D. C., December 18, 1906.

(F. I. D. 48)

SUBSTANCES USED IN THE PREPARATION OF FOODS.

The following letter was recently received at the Department of Agriculture: "We import a preparation of gelatin preserved with sulfurous acid for the purpose of fining wine. This gelatin is not used as a food and does not remain in the wine, although a small amount of the sulfurous acid may be left in the wine. Please inform us if the sale of this product is a violation of the food law."

It is held that the products commonly added to foods in their preparation are properly classed as foods and come within the scope of the food- and-drugs act. The department cannot follow a food product into consumption in order to determine the use to which it is put. Pending a decision on the wholesomeness of sulfurous acid, as provided in regulation 15 (*b*), its presence should be declared. JAMES WILSON, *Secretary of Agriculture.*

WASHINGTON, D. C., December 18, 1906.

Attention is called to an error in the October Bulletin, under "Revised Rules of the Board." Section 5, on page 247, rule XXVII, should belong to rule XXVIII, after section 4, on page 258.

"Who can tell me," asked the Sunday-school teacher, "what became of the swine that had the evil spirit cast out of them?" Little Johnny, who reads the papers, raised his hand: "Please, ma'am, they was all made into deviled ham."

"Looking at it from a purely selfish and personal standpoint, courtesy, unfailing and unfeigned, is one of our most valuable assets. No bank account bears half so high a rate of interest—none will so certainly declare its dividends."

"Whate'er the weather may be," says he,
"Whate'er the weather may be,
It's the songs we sing, and the smiles we wear,
That's makin' the sunshine everywhere."

—*James Whitcomb Riley.*

Little bits of refuse,
Little grains of dope,
Make the boneless chicken
And the scented soap.

—*Exchange.*

SUCCESS.

⁂

He has achieved success who has lived well, laughed often, and loved much; who has gained the trust of pure women and the love of little children; who has filled his niche and accomplished his task; who has left the world better than he found it, whether by an improved poppy, a perfect poem, or a rescued soul; who has never lacked appreciation of earth's beauty or failed to express it; who has always looked for the best in others and given the best he had; whose life was an inspiration, whose memory a benediction.

—Bessie A. Stanley,
Lincoln, Kan.

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